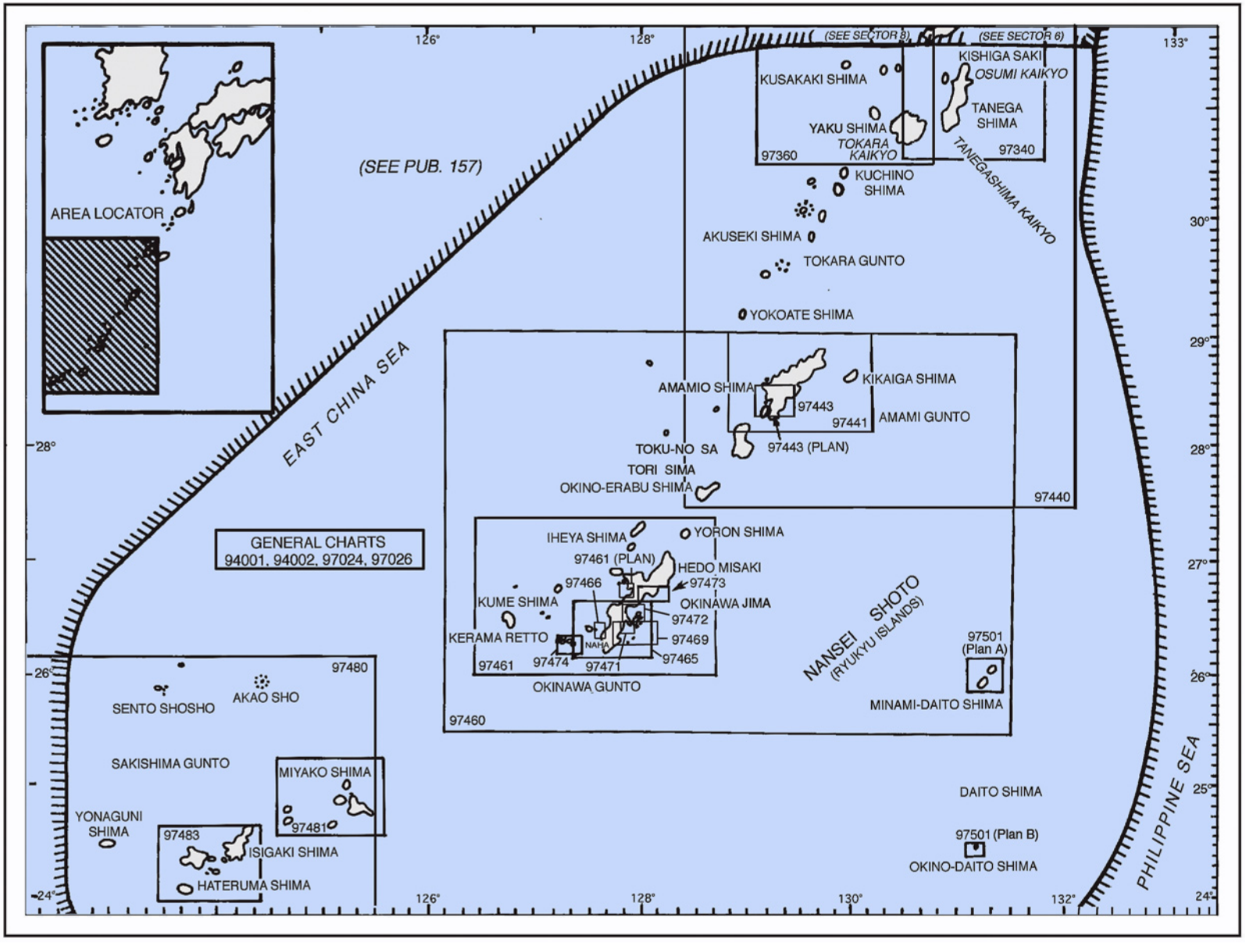
Click on "See Sector" to be hotlinked to that Sector.



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **7** — CHART INFORMATION

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SECTOR 7

NANSEI SHOTO (RYUKYU ISLANDS) AND OFF-LYING ISLANDS

Plan.—This sector first describes Sento Shosho and Daito Shoto (Daito Shima) and other isolated islands, then Nansei Shoto (Ryukyu Islands), a chain of islands divided into five groups, Sakishima Gunto, Okinawa Gunto, Amami Gunto, Tokara Gunto, and Osumi Gunto are described, in that order, from SW to NE.

The islands of Nansei Shoto are on an arc of a circle, with its convex side toward the Philippine Sea, between a position off the NE coast of Taiwan and the SE extremity of Kyushu, and thus forms the SE boundary of Tung Hai or the East China Sea.

Off-lying Islands

7.1 Sento Shosho (Senkaku-Shoto) (25˚47'N., 123˚38'E.), an unmarked isolated group of islets and rocks, is about 83 miles NNE of Yonaguni Shima. The group is only visited during the fishing season.

Uotsuri Shima is a double summit with a ridge on which there is a pinnacle rock conspicuous from the NE. The S side is cliffy with visible strata. The islet has been reported to be a good radar target at 29 miles. A 1,400 grt vessel has anchored off a sandy shore on the NW side of the islet.

Uotsuri Shima from E

Anchorage.—Anchorage may be obtained in a small area, in 36 to 45m, coarse coral and sand, about 0.8 mile offshore on the W side of Kobi Sho, and also in 45m, on the N side of the islet.

Tide rips form in the vicinity of Tobi Se, about 1 mile SE of the SE extremity of Uotsuri Shima.

Okino-kita Iwa, Okino-minami Iwa, and Minami-ko Shima are islets and rocks E of Uotsuri Shima.

7.2 Kobi Sho (25˚56'N., 123˚41'E.), about 17 miles NE of Uotsuri Shima, is the summit of an extinct volcano, the E side of which is a conspicuous vertical cliff, 53m high; all sides of the slopes are covered with palm trees and undergrowth. The shores of the islet are littered with large blocks of lava.

Akao Sho (Sikibi-sho) (25˚54'N., 124˚34'E.), an isolated islet about 60 miles E of Uotsuri Shima, resembles a junk under sail. The islet is formed of lava with no trees; it is fringed on all sides with a low flat shelf, broken in places and from which rise unclimbable cliffs. At its N end, there are some conspicuous pointed rocks. The islet is reported to be a good radar target at 20 miles.

Kobi Sho

Akao Sho has been reported to lie 0.8 mile NE of its charted position.

Caution.—Large patches of discolored water and breakers were reported (1949) about 76 and 80 miles N of Kobi Sho. A dangerous wreck is about 42 miles NNW of Kobi Sho, and an undersea volcano is about 68 miles WNW of the islet, causing areas of discolored water. Tide rips and breakers were also observed in the same area.

Discolored water, resulting from suspected volcanic activity, was reported (1987) in the vicinity 11 miles SSE of Tori Shima in Amami Gunto.

7.3 Daito Shoto (Daito Shima) (25˚10'N., 131˚15'E.) consists of three isolated islets, two of which are about 4 miles apart; the third islet more than 80 miles S of the first two.

The tidal currents in the vicinity of Daito Shima are hardly perceptible. The current is W at a rate of about 1 knot near the two N islands, and NW at a rate of about 0.8 knot near Okino-Daito Shima, the S island.

Okino-daito Shima (24˚28'N., 131˚11'E.), the S islet, has a treeless N half, brownish in color, and a cultivated S half. Heavy seas always run off the NW extremity of the islet. Two conspicuous, 15.2m high, chimneys are on the W side of the islet. The islet has been reported to be a good radar target at 17 miles. It is fringed with coral reefs, but there is deep water about 0.2 mile offshore. Tide rips are formed off the NW extremity.

Minami-daito Shima (25˚50'N., 131˚15'E.), about 80 miles N of Okino-daito Shima, has a low center area surrounded by a cultivated ridge 30 to 61m high. The coast is limestone cliffs 9.1 to 15.2m high. Three white monuments on a slope on the W side of the islet, and a chimney and a warehouse are good landmarks from offshore. Discolored water was reported in 1963 off the NW end of the islet. Two mooring buoys are laid off the NW end of the island.

Small vessels with local knowledge can moor off the principal landing place on the W side of the islet about 23m offshore, with two bower anchors down and with hawsers to shore so as to keep at right angles or parallel to the shore.

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Fish havens lie 3.5 miles W and 1.5 miles, respectively, S of the island.

Kita-daito Shima, about 4 miles NNE of Minami-daito Shima and marked by a light, is of similar formation.

Daijingu Yama, a hill and a chimney on a hill on the NW end of the islet, are good landmarks.

Small vessels with local knowledge can anchor off the W side of the islet with sterns secured to a mooring buoy. Mooring buoys are also laid off the N and S coasts of the island.

7.4 Sakishima Gunyo (24˚30'N., 124˚30'E.) has two principal islands, Yaeyama Retto and Mikayo Retto. Trees grow on both islands, but on the level parts of it sugar cane is cultivated. Houses on the islands have red tile roofs.

Tides—Currents.—Tides, which are weak, are often disguised by the current, which is N on the rising tide and S on the falling tide.

Caution.—The reefs which surround the islands of the Sakishima Gunto group are in most places covered with seaweed, and mariners are advised to exercise caution, especially in poor light conditions, in the vicinity of the island because dangers cannot not be easily seen.

Yonaguni Shima (24˚27'N., 123˚00'E.) is tree covered and hilly at both ends, but cultivated where it is level. The island is reported to be a good radar target at a distance of 22 miles.

A light stands on Iri Saki, the W extremity of Yonaguni Shima; another light stands on Agori Saki, the E extremity.

Nagai Se, a submerged rock almost 1.5 miles NW of Agari Saki the E extremity of Yonaguni Shima, is sometimes marked by breakers. A shoal, with a depth of 16.5m, lies 2 miles of Agari Saki.

Fish havens lie about 4.5 miles WSW and 5.5 miles SW, respectively, from Iri Saki Light.

Anchorage.—Temporary open anchorage can be obtained for large vessels, except during the Northeast Monsoon, in 18.3 to 36.6m, coral and sand, about 0.4 mile offshore from Sonai, a village on the N side of the island.

Iriomote Shima (24˚20'N., 123˚50'E.) has been reported to be a good radar target at 28 miles. The coral reefs surrounding the island are sometimes marked by breakers.

In 1979, a countercurrent to the Kuroshio Current, setting SW, was reported between Yonaguni Shima and Iriomote Shima, with marked rip currents in the vicinity of position 24˚15'N, 123˚16'E.

Iriomote Shima

7.5 South side of Iriomote Shima.—Yaeme Saki (24˚18'N., 123˚40'E.) is a cliffy headland surmounted by a grassy hill with a dome-shaped summit. Okinokami Shima, an islet about 8.5 miles SW of Yaeme Saki, is a breeding place for sea birds.

Ochimizu Saki, about 3.5 miles SE of Yaeme Saki, is faced by a high cliff and marked by a waterfall.

Kanokawa Wan, a small bay on the E side of Ochimizu Saki, has a high cliff on the E side of its entrance conspicuous because of its strata. A rock, awash, is in the middle of the bay; the sea breaks on it in rough weather.

Anchorage.—Vessels with local knowledge can obtain anchorage near the head of Kanokawa Wan, in about 20m; this anchorage is protected from all but S winds, but when the wind is from that direction it becomes untenable. Strong winds blowing down from the hills also make the anchorage unsafe.

Ubara Saka, about 5 miles E of Ochimizu Saki, is backed by a rather conspicuous peak, 420m high.

Haimi Saki, about 4.5 miles ESE of Ubara Saki, is a low point with a few pine trees.

A light stands at the head of a breakwater situated 0.8 mile NNE from Haimi Saki.

Hateruma Shima (24˚03'N., 123˚47'E.), an off-lying island about 12 miles SSW of Haimi Saki, is flat-topped and densely wooded.

A light stands close off the NW side of the island and two beacons mark rocks 0.3 mile offshore.

7.6 West side of Iriomote Shima.—Funauke Ko is entered between Saba Saki (24˚21'N., 123˚42'E.) and Hoka-banare Shima, about 1.3 miles NE. The seaward side of the last point is conspicuous steep cliffs with horizontal strata. Montonariya Saki, about 2.3 miles ESE of Saba Saki, is a low but conspicuous point with red cliffs.

Anchorage.—Funauke Ko affords anchorage to large vessels with local knowledge, in about 55m, mud, off the village of Funauke; small vessels anchor closer to the head of the inlet. During S winds, the harbor is subject to fierce winds that descend from the mountains. There are several mooring buoys for small vessels in the harbor.

Iriomote Ko, the next inlet N of Funauke Ko, has a reef at its entrance and affords anchorage only to small vessels with local knowledge.

Submarine cables run from the W side of Funauke around Hoka-Danare Shima, and into Iriomote Ko. Another submarine cable runs from Iromote Ko, around the N side of Iriomote Shima, to Nagura Wan.

Unari Saki, the NW point of the island, has a flat summit.

Urauti Wan, on the S side of Unari Saki, affords anchorage sheltered from NE winds, in a depth of 12m, to small vessels.

7.7 North side of Iriomote Shima.—Hatobanare Shima (24˚25'N., 123˚49'E.), about 3 miles ESE of Unari Saki, is flat tree-covered off-lying islet, 9.1m high, with two or three houses.

Tedo, a 442m high mountain about 5 miles SE of Unari Saki, has a 56m high waterfall that is conspicuous from seaward.

Hatoma Suido leads between the reefs of Hatoma Shima (24˚28'N., 123˚49'E.) and Iriomote Shima. Though the edge of the coral reefs can be distinguished in the daytime from the color of the water, caution is necessary because there are some sunken rocks close to them that cannot be seen. On the S side of the fairway, there is a bank of white coral, 3.3m high, about 2 miles E of Nishi Saki (24˚26'N., 123˚47'E.) that is conspicuous when the sun is behind a vessel.

Hatoma Shima, about 3.5 miles NE of Unar Saki, is an off-lying island marked by a light.

A submarine water pipeline lies across Hatoma Suido from the light on Hatoma Shima to the coast of Iriomote Shima near Uebaru. Submarine cables lie 0.5 mile W of this pipeline. One

cable runs across Hatoma Suido, the other is marked by a beacon on its N end.

A channel marked by beacons leads through Hatoma Suido towards Hatoma Shima Light, marks the SW entrance to the lagoon.

A submarine water pipeline is laid across Hatoma Suido SSW from the vicinity of Hatoma Shima Light.

A submarine power cable is laid about 0.5 mile W of the water pipeline.

Ubanare Shima (24˚22'N., 123˚57'E.), close offshore of Nobaru Saki, the NE point of Iriomote Shima, has some palm trees on it.

Islets between Iriomote Shima and Ishigaki Shima

7.8 **Aragusuku Shima** (24˚13'N., 123˚56'E.) consists of Shimochi, 20m high, on the SW and Uechi, 14m high, on the NE.

Kuro Shima, about 2 miles E of Uechi, is 12.2m high, with palm trees dotting its rocky shores and cultivated land in its interior. A light is shown from the S point.

Kobama Shima, about 4 miles N of Kuro Shima, is covered with grass. A light is shown from the SW extremity.

Kobama Komon, the only channel through the reefs between Irimote Shima and Ishigaki Shima, leads between the former island and Kobama Shima; it is very tortuous.

Anchorage.—Kobama Komon affords anchorage, sheltered from either monsoon, to small vessels with local knowledge, but the tidal currents in it are strong.

Kayama Shima, about 0.8 mile NE of Kobama Shima, is also covered with grass.

Taketomi Shima, about 4 miles E of Kobama Shima, is flat, partly wooded, and partly cultivated.

Ohara Passage, a narrow channel marked by numbered beacons, leads to Taketomi Shima. The channel entrance is marked by Beacon No. 21 (21˚24.2'N., 123˚55.7'E.), about 2.5 miles E of Haemi Saki.

A submarine power cable is laid between Taketomi Shima and Kobama Shima.

Several charted underwater cables connect the above islets and the islands of Iriomote Shima and Ishigaki Shima.

Ishigaki Shima (Isigaki Shima)

7.9 **Ishigaki Shima** (24˚25'N., 124˚12'E.) is fringed with coral reefs that are usually marked by breakers, but in calm weather, sunken rocks can be seen at a considerable depth. The villages on the island are all situated a short distance inland from the coast and are hidden by trees. Ishigaki Shima has been reported to be a good radar target at 32 miles.

South side of Ishigaki Shima.—Miyara Wan indents the S side of Ishigaki Shima; small vessels sometimes shelter in the bay during the Northeast Monsoon.

Southwest side of Ishigaki Shima.—The SW coast of Ishigaki Shima consists, for the most part, of a sandy beach.

Caution—A danger area in the vicinity of Ishigaki Shima exists within an area bounded by a line joining the following positions:

a. 24˚14'N, 124˚06'E.
b. 24˚25'N, 124˚06'E.
c. 24˚25'N, 124˚20'E.
d. 24˚14'N, 124˚20'E.

7.10 **Ishigaki** (24˚20'N., 124˚10'E.) (World Port Index No. 62520) is a small natural harbor on the SW coast of Ishigaki Shima, with anchoring and berthing facilities for small vessels. This port can accommodate vessels of 5,000 grt.

The entrance to the inner harbor lies between the N and S breakwaters, each with a light at its head. An area of reclaimed land extends E from the root of the S breakwater protecting the quays from the S. An outer detached breakwater, with a light on its SW head, extends NE across the inner harbor entrance.

A light stands at the head of an inner harbor breakwater, about 0.4 mile NE of the SW extremity of the outer detached breakwater.

Ishigaki Light

Two quays lie on the N side of the inner harbor. The depths alongside the berths range from 3.5 to 9.5m.

Tides—Currents.—The MHW tide interval in the outer harbor is 6 hours 39 minutes; spring tides rise 1.5m and neap tides 1.3m.

A tidal current crosses the channel leading to the inner harbor; caution is advised. A relatively strong current of 2 to 3 knots setting W alongside the wharf on the rising tide sometimes makes berthing difficult.

Aspect.—Several chimneys, a white harbor office building, a white-domed weather station, and a concrete radio tower are conspicuous.

Pilotage.—There are no pilots, but local channel guides are available on prior request.

Regulations.—As a rule, night entry into the harbor is prohibited. The inner part of the channel is narrow, so that when a vessel is coming out, an incoming vessel cannot proceed beyond Lighted Buoy No. 6. When all the berths at the embankment are occupied, vessels cannot proceed beyond Lighted Buoy No. 6. It is recommended that vessels awaiting passage through this waterway anchor in an area between Lighted Buoy No. 4 and Lighted Buoy No. 6. The water depth is 10m here and the flag signals at the terminal building can be seen. The signals of the harbormaster, displayed from the top of the roof of the Harbor Terminal Building, must be obeyed.

Anchorage.—Anchorage can be obtained by small vessels with local knowledge, in 23m, sand and shells, with Minano-soko Mori bearing 007˚ and distant nearly 2 miles.

A vessel drawing 6.4m anchored in 53m, sand and shells, with Kannon Saki bearing 084˚, distant 1.75 miles, and O Saki, a point about 3.3 miles NNW of Kannon Saki, bearing 005˚, distant 3.25 miles.

A submarine pipeline runs across Ishigaki Hakuchi, between Taketomi Shima and Ishigaki Shima. Submarine cables also are laid across Ishigaki Hakuchi N of the pipeline.

Directions.—The waterway starts at a point about 1 mile SSW of Kannon Saki. From the sea buoy, the channel runs ESE. The waterway is marked by buoys and lighted buoys. The area from Lighted Buoy No. 6 up to the embankment to the E is a narrow dredged waterway 6 to 8m deep and about 100m wide. White coral reefs line both sides of the channel and are reported to be easily recognized except in bad weather or at night.

Vessels heading N should steer for the position bearing 305˚ and 6 miles from Kannon Saki Light (a point where Ogan Misaki bears 058˚ and O Saki bears 096.5˚). From this position vessels should steer a course of 135˚, sighting the sea buoy on the port bow. Change to a course of 114˚ at a point where the sea buoy is abeam and the Kannon Saki Light bears 020˚, about 1.2 miles away. This course should reach a point close N of Lighted Buoy No. 6 from here; the heading may be made toward the embankment. Mariner should consult the latest chart to locate the shallow areas in this waterway.

Caution.—Several fish havens lie in the waters surrounding Ishigaki Shima.

A floating fish heaven, marked by a lighted buoy with a radar reflector, lies approximately 13 miles SSE of the S coast Ishigaki Shima.

Coral reefs on both sides of the entrance channel are visible since the water in the vicinity is relatively clear.

7.11 Nagura Wan is entered between Kannon Saki (24˚22'N., 124˚07'E.) and O Saki, about 3.25 miles NNW.

Anchorage.—Nagura Wan affords anchorage to vessels with local knowledge during the Northeast Monsoon, but it is not a safe anchorage; during the Southwest Monsoon, the sea breaks in the bay.

Vessels should refer to the chart for exact location of the submarine cables in this area. Several cables extend SE from O Saki, run around Yarabu Saki, and then run to Iriomote Shima, Taiwan, Okinawa Shima, and to Miyako Shima.

Yarabu Saki (24˚26'N., 124˚04'E.), about 1.3 miles NW of O Saki, is faced with black cliffs. Yarabu Take, a peak about 1 mile NE of Yarabu Saki and covered with a dense growth of trees, is dark and conspicuous.

7.12 North side of Ishigaki Shima.—Ogan Misaki (24˚27'N., 124˚05'E.) is marked by a light; close off it is a vertical-sided rocky islet, 30m high.

Ishi Saki, about 2.5 miles NE of Ogan Misaki, is marked by a rounded hill; it is bare of trees and difficult to identify.

Kabira Wan (24˚27'N., 124˚09'E.) affords safe anchorage to very small vessels, but local knowledge is essential.

During W winds, open anchorage can be obtained NE of the entrance of Kabira Wan, but care must be taken to avoid the reef off the village of Fukai (24˚27'N., 124˚12'E.).

Hirakubo Saki, the N point of Ishigaki Shima (24˚27'N., 124˚19'E.), is a cliffy point which rises to an elevation of 92m, with low land on either side of it. A light stands on Hirakubo Saki.

The E part of the Sakishima Gunto group is an archipelago called Miyako Retto.

7.13 West part of Miyako Retto.—Tarama Shima (24˚39'N., 124˚42'E.) and Minna Shima, about 4 miles N, are very low and care must be taken when navigating in their vicinity at night or in thick weather. Tarama Shima is formed of coral and Minna Shima of white sand. There is a small woodland at the E end of Minna Shima, the remainder being covered with palm trees, so that it appears green.

Yabi Se (24˚47'N., 124˚46'E.) lies about 4.5 miles NE of Minna Shima and is an extensive coral reef with a least depth of 8.7m. There is a deep channel between Minna Shima and Yabi Se.

A submarine cable lies between the S side of Minna Shima and the N side of Tarama Shima. There are depths of less than 18.3m between these islands.

Miyako Shima (24˚45'N., 125˚20'E.), on the E side of Miyako Retto, has an undulating surface; the island is partly cultivated, and on it are some pine woods. The two tanks charted in position 24˚46'N, 125˚20'E are conspicuous. Miyako Shima has been reported radar conspicuous at 17 miles.

An aero radiobeacon transmits from a position near the center of Miyako Shima.

Caution.—A danger area, due to mines, exist within the area bound by a line joining the following positions:

a. 24˚46'00"N, 125˚17'01"E.
b. 24˚46'00"N, 125˚0'400"E.
c. 24˚3500'"N, 125˚04'00"E.
d. 24˚35'00"N, 125˚2900'"E.
e. 24˚5500'"N, 125˚55'42"E.

f. 25˚03'00"N, 125˚03'00"E.
g. 24˚47'24"N, 125˚47'36"E.

7.14 West side of Miyako Shima.—Kurema Shima (Kuruma Shima) (24˚43'N., 125˚16'E.) should not be approached within 1.5 miles of its S side, nor within 2.25 miles of its SW or W sides, because of sunken rocks and coral reefs.

Sarahama (24˚50'N., 125˚14'E.) is a village on the NE side of Irabu Shima. The red roofs of the houses in the village are visible from seaward.

Sarahama Ko, consisting of a small basin protected by two breakwaters, lies in about the middle of the NE side of Irabu Shima. A light stands on the breakwaters.

Irabu Shima lies 2.25 miles off the W coast of Miyako Shima. Nagayama Ko, a small sugar exporting harbor, lies at the S extremity of Irabu Shima. The approach channel, entered about 2 miles S of Shimoji Shima, is marked by red and black beacons. Pilotage is essential.

Shimoji Shima (Simozi Shima) is close SW of Irabu Shima; there are some black cliffs and a conspicuous rock on its SW side.

Vessels without local knowledge should not enter the area between the W coast of Miyako Shima and a line connecting the extremity of the coral reefs extending W from Kurema Shima and S from Shimoji Shima.

Ikema Shima (24˚56'N., 125˚16'E.) has at its SE end a conspicuous dome-shaped hill, 27m high. A light stands on the NW side of the islet.

A light stands on a breakwater, 1.25 miles SE of Ikema Shima Light.

A fish haven lies 14 miles W of Ikema Shima Light.

7.15 Hirara (24˚48'N., 125˚17'E.) (World Port Index No. 62510) is on the W coast of Miyako Shima; it consists of a town, a small natural harbor with anchorage for large and small vessels, and berthing facilities for small vessels.

Hirara Ko (Miyako Hakuchi) is open NW, but affords shelter from both wind and sea between NE and SW through S.

Tides—Currents.—The mean high water interval at Hirara Ko is 6 hours 49 minutes; spring tides rise 1.8m, and neap tides rise 1.3m.

Depths—Limitations.—No. 1 Wharf extends NW from the front of the town at the inner end of the harbor. There are depths of 3 to 6m alongside on the NE side of the wharf and a depth of 7.5m on its SW side. Four basins protected by breakwaters are formed in the reclaimed land, N of No. 1 Wharf.

No. 2 Wharf, with depths of 6.5 to 9m alongside, lies 183m SW of No. 1 Wharf.

No. 3 Wharf, with a depth of 7.5m on its NE side, is SW of No. 2 Wharf.

Mud and sand spoil ground disposal sites and are situated 0.4 mile N of Naga-Saki, 1 mile W of Irihianna Saki, and 0.5 mile N of Shimo Saki.

Aspect.—There are few conspicuous landmarks in the vicinity of the Port of Hirara because the land is level and low, however, the following can be identified, as follows

1. The NW extremity of Irabu Shima and the top of the cliff on the SE end of the island.
2. The dome-shaped hill and the light structure on Ikema Shima.
3. Irihanna Saki and Sedo Saki (Miyo Saki).
4. Ogami Shima.
5. A chimney about the middle of the town of Hirara.
6. Two telecommunication towers, painted red and white, with parabolic antennas, E of downtown Hirara.

Anchorages.—The recommended anchorage for large vessels is in 53m, fine sand and shells, with the summit of Ogami Shima bearing 055˚, about 4.5 miles. Another anchorage for large vessels is available at a point where the Ikema Shima Light bears 011˚, the tip of Irihianna Saki bears 051˚, the outer edge of the E side of Irabu Shima bears 183˚, and the N end of Irabu Shima bears 248˚. The depth here is 53m and the bottom is mixed sand and shells.

The recommended anchorage for small vessels is in 26m, mud, with the 89m cliff at the SE end of Irabu Shima bearing 260˚, about 3 miles; to reach this position vessels must maneuver between the rocks in the vicinity of Shimo Saki. This is the quarantine anchorage.

When the Northeast Monsoon is blowing strongly, the only good anchorage is in 36.6m, sand and shells, with the summit of Irihianna Saki bearing 105˚, distant about 0.8 mile. However, care should be taken in avoiding the spoil ground and submarine cable in the vicinity.

Directions.—Vessels approaching from the N should stay clear of Yaye Bise (Yaee Bisel) and approach on a line bearing 138˚, between the telecommunication tower, 84m high, with a parabolic antenna and a radar dome at the center of Miyako Shima near Nobara Take. When Ikema Shima Light is abeam, alter course to 120˚ and head towards Nakamo Hanare, which lies 1.1 miles NNE of Shimo Saki. By following this course it is possible to reach the anchorage recommended for large vessels. There are no particularly conspicuous marks for vessels intended to enter this port; vessels should confirm their position by the landmark.

Under no circumstances should a vessel enter the foul area lying off the W coast of Miyako Shima between Irabu Shima and Shimoji Shima, on the NW, and Kurema Shima and its projecting reefs, on the SE.

Caution.—There are a number of detached coral patches, some of which are white and easily distinguished, but others are black and difficult to see; furthermore, undiscovered dangers may exist, and because of the nature of the bottom, the flukes of the anchor sometimes becomes wedged between the rocks. South of Shimo Saki, which lies about 4.5 miles S of Irihianna Saki (24˚55'N., 125˚17'E.), the bottom is in places white and the rocks black.

Vessels should note Miyako Shima and the adjacent islands have been reported to lie 1.1 miles W and 0.1 mile S of their charted positions.

7.16 North side of Miyako Shima.—Yaye Bise (Yae Bise) (25˚01'N., 125˚17'E.) is a dangerous area consisting of extensive coral reefs; in rough weather the reefs are marked by breakers, but in calm weather they constitute a very serious danger at HW. Great caution should be exercised when navigating in their vicinity. Yae Bise is marked by beacons, all of which are about 3m high.

Ogami Shima (24˚55'N., 125˚20'E.) is a conical islet with trees on its summit; it is the most conspicuous feature in the vicinity.

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Fude Iwa, about 4.8 miles NE of Ogami Shima, resembles a floating turtle when seen from the E and forms a good landmark; it is on an extensive reef and is marked by a light.

Okinawa Gunto

7.17 Okinawa Gunto (26˚20'N., 127˚30'E.) consists of the principal island of Okinawa Shima together with a number of islands and islets to the N and W. The group is reported to be a good radar target at 17 miles.

Caution.—Several fish havens lie in the waters surrounding these islands, some are charted, others of a temporary nature are not.

Kume Shima (26˚20'N., 126˚47'E.), the W of the Okinawa Gunto group, is elevated in its N and S parts, so that from the E or W it appears at a distance as two islands. Both the N and S sides of the island are cliffy, but the E and W ends are low. Kume Shima has been reported radar conspicuous at 27 miles.

Kume Shima Light (26˚21.7'N., 126˚42.7'E.) stands 1 mile E of the W extremity of Kume Shima.

Gima Ko, on the SW side of Kume Shima, is only available to small vessels with local knowledge.

Shimajiri Saki, the S extremity of Kume Shima, consists of shingles; it is surmounted by a conspicuous pointed hill, 65m high.

Tonobara Iwa is an islet about 1.5 miles SSE of Shimajiri Saki; its S side is a conspicuous cliff.

Ogame Se, the coral reef extending E from the E side of Kume Shima, is always marked by breakers. The N side of the reef covers at HW, and the S side is awash.

Ogan Misaki lies at the end of Ogame Se, about 6.5 miles E of Kume Shima. This reef is marked by a light.

Nakazato Gyoko, a small fishing harbor, is situated about 0.3 mile NW of Sonami Saki. The entrance is marked by a buoy and the harbor is protected by a breakwater. A light stands at the head of this breakwater.

A submarine cable runs from a wave meter on the sea bed, in the vicinity of the harbor entrance, to the shore SW.

The velocities of the tidal currents off this reef exceed 3 knots and tide rips occur.

Shimajiri Wan, entered about 1 mile NE of Shimajiri Saki, is only available to vessels with local knowledge. In rough weather, its whole surface is covered with breakers, because of the number of sunken rocks in it.

Tori Shima (26˚36'N., 126˚50'E.), about 15 miles N of Kume Shima, is a rocky islet faced with a cliff on its N side, its S side being somewhat sloping. At either end of the islet there is a pointed rock, and between them the surface is almost flat, so that from certain directions the islet has the appearance of a steam vessel; from E or W, it appears as two rocks. Tori Shima is frequented by vast numbers of birds, whose cries in the morning and evening are stated to have been heard at a distance of 1 or 2 miles. Tori Shima has been reported radar conspicuous at 25 miles.

7.18 Irisuna Shima (26˚23'N., 127˚06'E.), about 15 miles E of Kume Shima, has on it two flat circular knolls covered with palm trees. At the N end of the islet there is a flat sandy beach on which are two buildings. The velocities of the tidal currents in the channel between Irisuna Shima and Tonaki Shima, close E, sometimes exceed 3 knots and eddies occur. In a position about 4.5 miles S of Irisuna Shima, where the depths suddenly increase to over 183m, there are always eddies.

Tonaki Shima (26˚22'N., 127˚09'E.), about 3 miles SE of Irisuna Shima, is elevated at its N and S ends, so that from a distance it appears on certain bearings as two islets. The slopes of Nishimori, the N summit, are almost completely cultivated; O Take, the S summit, is rocky. Un Shi, a conspicuous black rock with two pointed summits, is 11.9m high, and lies close E of Gambaruno Saki, the S extremity of Tonaki Shima is 32m high, and close within it are three conspicuous pointed hills.

Anchorage.—Vessels with local knowledge can obtain open anchorage outside the reefs filling the bay on the E side of Tonaki Shima.

7.19 Aguni Shima (26˚35'N., 127˚14'E.) is located about 14 miles NNE of Tonaki Shima. The W portion of the island is a plateau; near the middle of the E edge of the plateau there is a woodland which is conspicuous from E, its top being at an elevation of 77m. A low flat rock, on the NW side of Fudesaki Saki, the SW extremity of Aguni Shima, is joined to the shore by a coral reef and is a conspicuous feature; it is marked by a light. Two sunken rocks, close SW of Fudesaki Saki, are always marked by breakers.

Anchorage.—Open anchorage, affording some shelter from winds between the N and E, can be obtained by vessels with local knowledge outside the reefs fronting the village of Hama, on the S side of Aguni Shima.

Aguini Ko, a local port, is enclosed by E and W breakwaters and is open to the S; a swell runs direct into the harbor. North of the entrance there is a small jetty; W of this jetty there is a quay, 30m long, with depths of 4.4 to 4.6m alongside. To the E of the jetty, there are berthing facilities for fishing vessels.

7.20 Kerama Retto is an archipelago within the Okinawa Gunto group extending from Yakabi Shima and Kuba Shima on the W, to Mae Shima, on the E. The islands are hilly; the summits of the hills are covered with dense forests and pine trees.

Tides—Currents.—In the various channels of Kerama Retto, the tidal currents flow continuously N or S for a period of about 6 hours at a rate that occasionally reaches 3 knots. The N current flows from 3 to 4 hours after LW; the S current flows from 3 to 4 hours after HW and to 3 to 4 hours after LW.

Tokashiki Shima (26˚11'N., 127˚21'E.) is the largest island in the Kerama Retto group. The island has two groups of hills on it, one in the N and the other in the S part. Akama Yama, the summit of the island, rises in the N group about 1 mile SE of Nu Saki (26˚13'N., 127˚21'E.). Takinomichi Yama and Omija Yama, which are conspicuous in the S group, rise about 1.8 miles and 1 mile N, respectively, of Aware Saki, the S extremity of the island; the former hill has a pine woodland on its summit. A light stands on the summit of the islet.

It was reported (1963) that a large group of lights in the vicinity of Akama Yama is very conspicuous and visible from a great distance at sea.

Kerama Kaikyo is the channel leading through Kerama Retto, between Tokashiki Shima and the islands to the W.

The E side of the strait is relatively free of dangers, but the W side has numerous charted dangers. The channel has a depth of about 60m and has a navigable width of 0.8 mile.

The interior of the strait is a natural anchorage protected from all winds. At times, vessels from Naha Ko seek shelter from storms in this strait. In 1945, a typhoon struck the strait and several vessels dragged anchor and ran aground; therefore, it cannot be considered a safe anchorage under such severe conditions.

Submarine cables lie across Kerama Kaikyo, running from the S side of Zamami Shima to the NW side of Tokashiki Shima, and to the SW side of Okinawa Shima.

Tomumoya Sho consists of three shallow patches in the S approach to Kerama Kaikyo. The N patches are rocks that uncover at 1.8m and the S patch has a depth of 5.5m. About 2.3 miles WSW of Tomumoya Sho lies Shimo Sone. This is always marked by eddies and is a steep-to rock with a depth of 5.5m.

Mae Shima (26˚13'N., 127˚27'E.), the E island of the Kerama Retto group, is sparsely covered with trees and has a conspicuous conical summit. Hate Shima, about 1 mile to the N, is also conical. A light is situated on Hate Shima.

Rukan Sho (26˚06'N., 127˚32'E.), a reef about 13 miles SE of Mae Shima, is marked by a light, fitted with a radar reflector at its N point.

Keise Shima, about 9.5 miles N of Rukan Sho, is a group of three sand and pebble islands.

Okinawa Shima

7.21 The SW and NE parts of Okinawa Shima differ greatly in character; the NE part is rugged, mountainous, wooded, there are few inhabitants, and very little cultivated land, whereas the SW part is populous and consists of hills and plateaus which, except where there is a sparse growth of trees, are highly cultivated.

Caution.—Coral reefs fringe Okinawa Shima, especially the SW part, where conditions are favorable for rapid growth. The development of coral reefs greatly affects the bays and harbors of the island; for example, Naha Ko becomes so narrow it is difficult to enter or leave the harbor.

Caution should be exercised when approaching Okinawa Shima. A landfall should not be attempted during the hours of darkness or poor visibility. The presence of reefs and shoals fringing the island substantially reduces the effectiveness of radar.

A submarine exercise area is from 12 to 15 miles E of the N part of the SE side of Okinawa Shima.

Okinawa Shima—West Side

7.22 **Kiyan Saki** (26˚05'N., 127˚40'E.) is the SW point of Okinawa Shima; the ruins of an ancient castle are close E of the point.

Several fish havens lie within an area extending 19 miles from the coast to the WNW and E of Kiyan Saki Light. A fish haven lies 18 miles SW of the light.

Yoza Dake, about 3.5 miles NE of Kiyan Saki, is 168m high, flat-topped, and conspicuous. There are two tanks and a dome on its summit. A television tower stands 5.5 miles N of Yoza Dake.

Okaha Shima, a small islet about 3.5 miles NNW of Kiyan Saki, is always marked by breakers.

Muki is a reef located about 1 mile WNW of Okaha Shima. The depth here is 0.5m. A rock reef ledge extends about 0.8 mile from the N side of Muki. The waves break constantly over this reef.

Tokomasari Sho lies about 1.4 miles NW of Kiyan Saki and is a reef that uncovers.

Reference should be made to the chart for location of the fish haven obstructions off this coast.

Senaga Shima (26˚10'N., 127˚39'E.), about 6 miles N of Kiyan Saki, is conspicuous and is surrounded by sandy beaches, from which it rises in rocky steps to a conical hill.

Omine Yama (26˚11'N., 127˚39'E.) is a conspicuous, isolated 27m hill, with several large pine trees on it. A fish haven lies 1.5 miles SW of Omine Yama. A beacon marks the W extremity of Ose reef, lying 1.25 miles W of Omine Saki.

Naha Ko (26˚13'N., 127˚41'E.)

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7.23 Naha Ko, the primary large harbor in Nansei Shoto, is on the S part of the W coast of Okinawa Shima. It consists of the city, which is the principal city of the island, an outer harbor, and inner harbors with anchorage and berthing facilities for large vessels.

There are no restrictions as to the length or beam, however, the maximum draft remains 11m. It is requested that if vessel is over 30,000 grt, entry should be discussed with the Maritime Safety Agency.

Winds—Weather.—The outer harbor is exposed to winds from the W to N, but the seas are reduced by the numerous coral reefs. The wind is usually from the N or S; from November through March, the winds are from NW through NE most of the time. The wind is from the E for the greater part of April and May, and from the S from June through August. The velocity of the prevailing wind is a gentle to moderate breeze. A maximum wind velocity of more than 96 knots from the E to NE has been recorded at the harbor.

The rainy season lasts from the first of May to the last of September, with a monthly average of 215mm. December through February is the driest period, with an average monthly rainfall of 125mm.

When strong W to N winds exceed 25 knots, traffic movements in the outer harbor becomes difficult.

Tides—Currents.—The MHW interval at Naha Ko is 6 hours 52 minutes; spring tides rise 2m and neap tides rise 1.4m.

The tidal currents on the rising and falling tides, respectively, flow NE and SW in the approach to the harbor, and N and S across its entrance; they turn from 1.5 to 2 hours after HW and LW, and at springs attain a rate of 1.8 knots.

West of Jijaka Se and Kanno Se, the flood current sets NNE with a velocity of 2.3 knots, and the ebb current sets SSW with a velocity of 2 knots.

In the vicinity of the sea buoy, the flood current sets NE at a maximum rate of 1.5 knots, while the ebb current sets SW at a maximum rate of 1.5 knots.

At the breakwater in To Kuchi entrance, the flood current sets NE at a rate of 1 knot, while the ebb current sets SSE at a maximum rate of 1 knot.

Depths—Limitations.—The depths in To Kuchi, the main channel, and in the main harbor are maintained by dredging and are sufficient to accommodate deep-draft vessels. It is advisable that mariners endeavor to obtain the most recent depth information before entering port. The depth limitation in the channel is 11m. The largest known ship ever to moor at a port wharf was 34,000 grt, with a draft of 9.9m.

The bay has three waterways; Miyako Kuchi, To Kuchi, and Yamato Kuchi. It is advised that vessels refrain from navigating through Miyako Kuchi, unless well-experienced in the conditions of the area. To Kuchi affords the easiest navigation, and most vessels choose this waterway. Vessels should navigate with caution and note the location of the shoals in this area. Yamato Kuchi runs between the NW part of Inan Bise and Jijaka Bise. This waterway is used by vessels up to 5,000 grt. Vessels not experienced in navigating this area should not proceed at night.

Depths alongside the berths in this harbor range from 2.2 to 11.5m.

Okinawa Oil Supply Jetty, situated outside the harbor entrance 0.5 mile W of Miegusuku, is a dolphin berth, with a depth alongside of 6.4m.

A small basin, having depths of about 4m, lies close S of Miegusuku. Naha Wharf Quay No. 1 to Quay No. 7 lie on Naha Wharf, situated on the NE side of the inner part of the harbor. The quays are commercial berths having depths alongside of 5 to 9m. Naha Wharf is also used by the ferries commuting to the mainland and by passenger and coastal vessels. Gunko Quay, having 11 berths reserved for military traffic, lies on the S side of the basin and has depths of 4.6 to 10.3m alongside.

The newer port of Naha Shin Ko (26˚14'N., 127˚41'E.), also known as Aja Port, is situated 1 mile N of Okinawa. Shinko Wharf lies on the N side of Shinko and is divided into two basins. Berth No. 1 and Berth No. 2 have depths of 7.5m and 5m, respectively. Quay No. 3 and Quay No. 4 have alongside depths of 7.5m. Vessels up to 20,000 dwt may berth at Quay No. 5, Quay No. 6, and Quay No. 7, in depths of 11m.

Urasoe Wharf, on the E side of the basin, is dredged to 7.5m and lies NE of Shinko Wharf. Aja Fishing Harbor lies on the SW side of the basin.

Pilotage.—Pilotage is compulsory when entering Naha Ko. The pilot boards in position 26˚14'N, 127˚38'E.

Signals.—Vessels entering into or departing from Naha Port must show the following signals:

1. Entering Naha Pier—Second Subsitute over N flag.
2. Entering Shinko Pier—Second Subsitute over S flag.
3. Departing Naha—First Subsitute over T flag.
4. Departing Shinko—First Subsitute over T flag.

Caution.—It is reported that the S tidal current sometimes flows off the reefs into the fairway with such force as to inconvenience a vessel entering or leaving.

Near the entrance of the main inner harbor there is a tendency for a vessel to be set toward Miyegusuku on the falling tide.

7.24 Miegusuku (Miyegusuku) (26˚12'N., 127˚40'E.) has a signal station and a white marker.

Sojun Yama, a hilltop close NE of Miegusuku, is 46m high and a hotel just a little farther E are both easily seen.

A conspicuous hospital stands on the NE side of Sojun Yama and conspicuous hotels stand 0.2 mile N and 0.3 mile ENE of the hospital.

A television tower, 51m high and painted red and white, lies 0.5 mile ENE of Miegusuku.

A lighted range leads through To Kuchi and are shown from the head of the harbor. It has been reported that during late afternoon, the range may be obscured by vessels moored inside the harbor. A port control tower in position 26˚14’N, 127˚41’E stands on top of a large rectangular building. Both the control tower and the building are painted white and red horizontal stripes.

An international airport is situated 1.5 miles WSW of Naha. Medical facilities are available close to the port.

Pilotage.—Pilotage is compulsory for vessels over 300 grt and pilots board in position 26˚13'49"N, 127˚38'20"E. In inclement weather pilot boards in position 26˚14'N, 127˚35'E. Naha Pilots should be contacted 1 hour prior to arrival on VHF channel 13. Berthing is normally carried out during daylight hours only. Unberthing can be undertaken at any time.

Regulations.—Vessels over 500 grt must send notice of arrival 24 hours in advance.

Signals.—Vessels over 100 grt must display signals to indicate their destination, as follows:

1. Yamotoa Kuchi—Flag Y under First Substitute.
2. To Kuchi—Flag Y under First Substitute.
3. Naha Pier—Flag N under First Substitute.
4. Anchoring Pier—Flag N under First Substitute.
5. New Harbor—Flag S under Second Substitute.

Anchorage.—The outer anchorage is within a W semicircle, the diameter of which is 3 miles long in a N-S direction and is centered at Naha Ko Lighted Entrance Buoy.

The inner anchorage is E of a line connecting Monnan Se, Kanno Se, and Jijaka Se. Anchorage with relatively safety can be made here, but the area is surrounded by coral reefs and the bottom is dangerous, therefore, anchorage without pilot assistance and/or local knowledge is not recommended.

The Quarantine Anchorage lies close W of the Middle Breakwater, Kanno Bise, and Zizyaka Bise. A submarine cable for a wave meter lies N of this anchorage.

Attention must be paid to the installation of five standard anchorage areas. These anchorages have been installed for the purpose of securing passages for ships as well as anchorage areas for vessels carrying dangerous cargoes. For detailed information on these areas, contact the Port Director.

Taking refuge at Naha Ko is dangerous during rough weather, especially when a typhoon is approaching; large ships take refuge at Oshima Strait, N of the Nanse Islands, while ships of less than 1,000 grt take refuge at Unten Port; also, ships are reported to take refuge at Agonoura Port in the Kerama Kaikyo.

Caution.—The charted shoals can usually be identified by the color of the water, however, at times during the rainy season, because of muddy water flowing out of the inner harbor, the sea becomes white and has the appearance of shoals, especially in the vicinity of Sakibaru Saki.

It has been reported that the reef Jijaka Se (Zizyaka Bise) extends farther W than charted.

There is a dangerous wreck approximately 1 mile N of Jijaka Se.

Okinawa Shima—West Side (continued)

7.25 **Kuzi Saki** (26˚16'N., 127˚43'E.) is a low scrub-covered point, close off which is a rocky islet, 9m high. Two chimneys, with red and white bands and having heights of 168m and 178m, stand 0.5 mile E of Kuzi Saki.

A channel, marked by lighted buoys and buoys, leads to Machiminato, an islet 0.75 mile E of Machiminato Saki. The channel entrance is marked by Lighted Buoy No 2, moored 1 mile NNW of Machiminato Saki.

A light stands on the head of Ginowan Ko Breakwater, situated 1.1 miles NE of Machiminato Saki.

Sunabi (26˚20'N., 127˚45'E.) is a village backed by a conspicuous row of rocks with a serrated outline.

Kadena Airport Aero Light is shown at an elevation of 96m from a position 1.5 miles NE of Sunabi.

Zampa Misaki (26˚26'N., 127˚43'E.) is a conspicuous, flat-topped, grassy cape, on which are a few rocks with palm trees among them and a light. A tank tower about 3 miles S of Zampa Misaki is conspicuous. Sakimi, the conspicuous ruins of an ancient castle, with pine trees on its walls, stands about 2.5 miles SE of Zampa Misaki. It was reported (1945) that there was at least 18.3m of water over the hull and masts of the wreck charted about 3 miles SSW of Zampa Misaki.

Nago Wan (26˚34'N., 127˚56'E.) is exposed to winds from between the SW and W. Fixed fish traps are laid along the shores of Nago Wan between Onna, a village about 8.5 miles NE of Zampa Misaki, and Awa, a village about 2 miles E of the N entrance point of the bay. Anchorage can be obtained about 0.5 mile offshore, abreast the village of Okaneku at the head of the bay. A breakwater, with a light at its head, fronts Okaneku. The quays in the harbor have depths alongside of 2 to 4.6m. A submarine cable lies 0.2 mile ENE from the coast at a point 3.5 miles WSW of Okaneku.

Sesoko Byochi (26˚38'N., 127˚53'E.) affords anchorage for small vessels sheltered from winds from all directions, in 9.1 to 20m. A good berth is in 18.3m, sand and shells, with the summit of Sesoko Shima bearing 318˚ and distant 0.75 mile. In this position, the tidal currents are appreciable, but good protection is afforded against NE winds. The N entrance of this anchorage is almost blocked by reefs and should not be attempted; the S entrance is recommended.

A bridge, with a vertical clearance of about 22m, spans Sesoko Byochi.

Caution.—A number of live cannon shells have been found in this anchorage. Vessels should seek information from the port of Toguti Ko before anchoring here.

7.26 **Toguchi Ko** (26˚40'N., 127˚53'E.) provides sheltered anchorage, in 12.8 to 18m, in the N part, and an anchorage, in 6.8 to 22m, off the inner harbor in the S part, except during W to NW winds. The reefs in the N part of the harbor are usually marked by breakers.

Iigusuku Yama (26˚43'N., 127˚49'E.) rises on the E part of Ii Shima; it has the appearance of a hat from ENE. A light, 11m high, stands on the W extremity of Ii Shima.

Bise Saki (26˚43'N., 127˚53'E.) is low and has a serrated outline.

Unten Ko (26˚41'N., 128˚01'E.), off the SW side of Kouri Shima, affords anchorage, in about 22m, in the outer part. It is exposed to N winds, and the swinging room is restricted.

The inner anchorage, off the village of Unten, in 14.6 to 16m, mud bottom, is a safe anchorage for small vessels.

Submarine cables are laid across the channel between the SW extremity of Kouri Shima and the main island. A submarine power cable runs N from the mainland coast 2.5 miles W of Kouri Shima.

Pilotage.—A pilot can be arranged from the Naha Pilotage Area.

Hedo Misaki (26˚52'N., 128˚16'E.) is the termination of a level promontory and is faced by a cliff, 30m high. On this promontory stands a pine woodland, and about 1.3 miles S of the cape there is an isolated, rocky hill, 246m high, both of which are conspicuous. At the foot of the hill stands a conspicuous monument resembling a large house built of chalk. A light stands on the W side of Hedo Misaki.

Okinawa Shima—East Side

7.27 On the S part of the E coast there are several bays. Because there are many islands, islets, and rocks in the vicinity of the entrances to these bays, there is shelter from winds and waves and the depth of water allows for anchoring large vessels, however, because of the great number of dangers within the bays caution is necessary.

From Ari Saki, the S extremity of Okinawa Shima, to Chin Saki (Kin Misaki), about halfway along the E coast of the island, the coast is indented to form the two large bays, Nakagusuku Wan and Kin Wan (Chin Wan). Coral reefs extend well-offshore from these bays.

From Chin Saki to Kaata Wan, about 16 miles farther N, there are several smaller bays, but most of these entrances are blocked by coral reefs so that large vessels are only able to enter Ora Wan (Oura Wan).

The remaining portion of the 21 miles of coast from Kaata Wan to Hedo Misaki has few indentations and is generally gently shelving. Because of coral reefs the coast should be approached no closer than 0.5 mile, but farther out it is steep-to.

Tides—Currents.—Within 3 miles offshore of the E coast of the island, the flood tide flows S or SW and the ebb tide in the opposite direction. Off Adaka Shima the rate does not exceed 1 knot. More than 3 miles offshore the flood tide generally seems to be N.

During the ebb tide, the current pushes a vessel towards Tsuken Shima.

The water tower in position 26˚09'N, 127˚47'E is prominent.

7.28 **Tsugen Shima** (Tsuken Shima) (26˚15'N., 127˚57'E.) is surmounted by some conspicuous pine trees. A radio tower close N of the light on the island is reported to be more conspicuous than the light. An obstructed fish haven lies about 2 miles W of the light.

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Heanza Banare (26˚21'N., 127˚57'E.), about 5 miles N of Tsugen Shima, has a conspicuous chimney on its SE side. A small white tank, with five large green tanks extending NW from it, is reported to be prominent close SW of the chimney.

Okinawa Sekiyukiti is comprised of two parts, Nakagusuku Wan and Kin Wan, and is divided here into those two parts for description. There are numerous berths and facilities within these ports, most of them belong to and are for the exclusive use of oil companies.

Nakagusuku Wan (26˚14'N., 127˚55'E.)

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7.29 Nakagusuku Wan, sometimes called Buckner Bay, is a big wide open bay occupying the S half of Okinawa Sekiyukiti. The port facility here is sometimes referred to as Nishiara.The bay becomes more shallow farther in and reefs extend offshore for a considerable distance. In particular, there are many rocks awash and covered rocks for about 6 miles S from the N corner of the inside the bay that form an obstruction in the roadstead.

There are four channels to the entrance of this bay. They are, from the S, Kudaka Kuchi, Tatsu Kuchi, Tsuken Kuchi, and Hamahiga Kuchi. The preferred channel is most often Tatsu Kuchi, which is approximately 2 miles wide and has a depth of 55m.

This port handles the crude oil and product for Okinawa Prefecture.

Winds—Weather.—Nakagusuku Wan is exposed to winds between the NE and SE. Violent squalls occur occasionally in the bay and vessels should provide for this contingency.

At Baten Ko (26˚11'N., 127˚47'E.), the MHW interval is 6 hours 22 minutes. Spring tides rise 2m and neap tides rise 1.5m. On the E side of Baten Ko, there is a gap in the coastal reef leading to a small basin; buoys mark the entrance.

Depths—Limitations.—For crude oil vessels, a single anchor leg type mooring (SALM) capable of handling vessels from 90,000 to 270,000 dwt is established in approximate position 26˚14.0'N, 127˚49.7'E, about 2.5 miles offshore. The depth of water at the buoy position is about 25m. Vessels may remain at berth in winds up to 50 mph.

A sea berth is situated 1.9 miles SSE of Kuba Saki. The depth of water is about 22m; the berth can accommodate vessels up to 100,000 dwt.

A product pier is connected to the shore and has two berths; one berth is for vessels up to 65,000 dwt the other berth is for small vessels up to 4,000 dwt. The depth at the pier is about 14.3m.

A refinery pier, with two dolphin berths at its T-head, is situated 4 miles SSW of Kuba Saki and is suitable for vessels up to 250,000 dwt.

Aspect.—The water towers standing 1.25 miles SSW and SE of Baten Ko are conspicuous.

Yonabarn Wan, the SW part of Nakagusuku Wan, is sheltered by hills on its S and W sides and affords anchorage in summer.

Several fish havens lie in Yonabarn Wan.

A light stands on the W end of a breakwater at the entrance to a small harbor lying 0.6 mile W of China Saki.

In the Tatsu Kuchi entrance, the flood current sets in at a small rate and the ebb current sets out at a rate of 0.75 knot. In Kudaka Kuchi, farther S, the currents attain a rate of 1 knot. Strong currents have been reported in the bay with a set toward the island of Tsuken Shima.

Kuba Saki (26˚17'N., 127˚49'E.), at the middle of the head of Nakagusuku Wan, rises to a hill 175m high, covered with pine trees, and conspicuous; a ruined castle is on the W side of the hill. A light stands on the head of a breakwater, extending SW from a reclaimed land, about 0.6 mile NNW of a television tower.

The charted aerial beacon 5 miles NW of Kuba Saki is prominent.

A large building, with a chimney on its roof, is about 2.5 miles NNE of Kuba Saki.

A television tower, on the E end of a sand spit about 2.5 miles NE of Kuba Saki, and the white buildings and white chimney of a sugar mill about 2 miles farther NE are prominent. Another light stands 1.5 miles ESE of the television tower. Two water towers standing 1.25 miles SSW and SE of Baten Ko are conspicuous.

A lighthouse on Katsuren Saki (26˚17'N., 127˚55'E.) is also prominent, although care must be taken not to confuse the light structure with any of the surrounding white structures. A lighted buoy is situated about 2.5 miles in a SE direction within Touken Kuchi.

Pilotage.—Pilotage is compulsory. Normally vessels will be expected to enter Nakagusuku Wan through the Tatsu Kuchi entrance and pick up the berthing master inside the bay, S of Tsugen Shima (Tsuken Shima). Berthing masters request vessels keep S of buoy marking Chikuniga Shoal. Tugs are available. Berthing is carried out in daylight only; unberthing is carried out 24 hours. A pilot can be employed by ships entering and leaving White Beach Gunko on the W shore of Katsuren-Hanto. The pilot will be dispatched from Naha and will board in approximate position 26˚13.7'N, 127˚56.6'E.

Regulations.—The ETA at the refinery pier should be confirmed 72 hours, 48 hours, 24, hours and 12 hours before arrival. A vessel awaiting a berth should anchor 4 miles E of the refinery pier after embarking the berthing master. Berthing at the SBM and pier is restricted to daylight hours; unberthing may be carried out any time of day or night.

The area of water in front of and to the S of the SW end of Katsuren Hanto is under U.S. Military control and entrance to this area by civilian vessels is prohibited or limited.

Anchorage.—Nakagusuku Wan affords good anchorage to large vessels, in 21.9 to 36.6m, sand and shells, around the center of the bay. Vessels should note, in the area around the center of bay, a high swell may intrude if winds from the ENE or ESE continue for 2 or 3 days. Traffic between the ship and land becomes impossible.

Entrance into the sea area within 50m of the hazardous cargo berths is prohibited to vessels not equipped with spark prevention screens in their funnels, vessels handling naked fire, and vessels on which fire control administration is insufficient.

The quarantine anchorage lies N of Kutaka Shima, as indicated on the chart.

7.30 Katsurin Wan (Katchin Wan) is sheltered by the hills on Katsuri Hanton (Katchin Hanto) on its NE side, and by the

reefs N of Tsuken Shima on its E side; it affords good winter anchorage, in 14.6 or 16.5m, to vessels with local knowledge.

Depths—Limitations.—A channel, dredged to 13m in 1996 and marked by lighted and unlighted buoys, leads to a wharf at the head of Katsurin Wan.

Aspect.—A television tower stands at the end of a spit extending ESE from the W shore of Katsuren Wan. A radome, with a radio tower nearby, stands about 0.4 mile NW of Katsuren Saki. A light stands 1.5 miles ESE of the television tower and a conspicuous white chimney stands 1 mile NW of Katsuren Saki Light.

Yonabaru Wan is sheltered by hills on its S and W sides, and affords anchorage in summer.

Baten Ko (26˚10'N., 127˚47'E.) is sheltered, except from the N, and affords good anchorage in summer, but it is only available to small vessels.

Yonabaru Ko is open E, and is therefore not a good anchorage, however, it is much used by local small vessels.

In the interest of safety, ships will not enter the restricted area unless so directed by the berthing master.

Kin Wan (Chin Wan) (26˚22'N., 127˚58'E.)

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7.31 The port of Kin Wan (Chin Wan) consists of several towns and a large open bay with anchoring, mooring, and berthing facilities for large vessels.

Winds—Weather.—Northeast winds cause a considerable swell within the bay. When typhoons are imminent, all cargo operations cease and vessels are required to vacate berths and are recommended to proceed to sea.

Depths—Limitations.—The sea berths can handle vessels of 500,000 dwt and 150,000 dwt, and have depths of 31m and 27m, respectively. Product berths range from 10,000 dwt to 60,000 dwt, with depths from 9.1 to 15.2m.

An oil terminal, cement works, and shipyard are situated on the SW side of Ishikawa Dakae at Ishikawa.

Aspect.—Onna Take rises 366m on the N side of the bay, about 5 miles WNW of Kin Saki (Chin Saki) ; there are three pointed summits between 0.5 mile and 1.25 miles E of this mountain that show up well from seaward; farther SE, the mountains gradually decrease in elevation and on them are plantations of pine trees. The village of Kin is situated among these plantations, but is conspicuous from seaward.

A light stands at the head of Kin Wan, 6.5 miles WSW of Kin Misaki.

Ishikawa Take rises 230m on the isthmus at the head of the bay. A conspicuous dome, the charted position of which is approximate, is located on the S side of this hill.

A water tank stands in a position nearly 2.5 miles NW of Kin Saki; the tank was conspicuous (1962) from at least 2 miles seaward.

A fish haven lies 1 mile SE of Kin Saki. Several fish havens lie in Kin Wan.

Kuro Se, 18m high, is a conspicuous rock that lies about 0.5 mile E of Chin Saki.

Pilotage.—Vessels should make for position 26˚26'N, 128˚04'E, off the E coast of Okinawa Shima; from that point steer due W passing the buoy marking the N side of Mengui Sho (approximate position 26˚24.7'N., 128˚02'E.), abeam to port, 1.25 miles distant. The berthing master will board vessels (150,000 dwt or more) to the port when they are abeam of the buoy. If circumstances prevent this the vessel should continue on a W course for 1 mile past the buoy, then alter course to 233˚. About 3.3 miles on this last course should bring the vessel approximately to the inner pilot station at 26˚24'N, 127˚58'E.

Vessels are advised to send their ETA at least 72 hours, 48 hours, and 24 hours in advance. The ETA should be confirmed at least 12 hours before expected arrival.

Berthing operations are permitted during daylight hours only, however, unberthing may take place at any time of the day or night.

Anchorages.—For mammoth vessels, in order of arrival:

M1 26˚24'09"N, 127˚57'41"E.
M2 26˚24'49"N, 127˚58'15"E.
M3 26˚25'29"N, 127˚58'40"E.
M4: 26˚26'08"N, 127˚59'05"E.

(Japanese Coastguard MSA approval is obtained by the vessel's agent.)

For vessels 50,000 to 150,000 dwt:

S1 26˚23'38"N, 127˚57'29"E.
S2 26˚23'14"N, 127˚57'14"E.
S3 26˚22'50"N, 127˚56'59"E.

The Products Anchorage is an area bounded by a line joining the following positions:

a. 26˚22'00"N, 127˚56'29"E.
b. 26˚22'13"N, 127˚56'33"E.
c. 26˚22'00"N, 127˚57'19"E.
d. 26˚21'51"N, 127˚57'05"E.

The holding ground is good in these anchorages, however, the depths vary from 40 to 53m.

Depths in the product anchorage vary between 18 and 22m.

The quarantine anchorage, marked on the chart, lies WNW of Ike Shima.

Owing to the existence of underwater pipelines, telephone cables, and obstructions, anchoring is prohibited anywhere SE of a line joining the following two positions:

a. 26˚22'31"N, 127˚58'08"E. (the NE dolphin of Sea Island).
b. 26˚21'37"N, 127˚56'44"E. (the NE dolphin of Berth No. 3 on the Products Pier).

For berthing, masters of vessels are requested to have the propeller submerged and the vessel in a reasonable trim for shiphandling purposes.

Okinawa Shima—East Side (continued)

7.32 There are several shoal patches a short distance outside the barrier reef, therefore, caution must be exercised not to approach Henoko Saki (26˚31'N., 128˚03'E.) too closely.

Oura Wan (Ora Wan) (26˚32'N., 128˚04'E.) is entered between Henoko Saki and Abu Saki, about 2.5 miles ENE. Abu Saki is backed by a pine grove; the tops of the trees reach an elevation of 48m, and as there are no other trees in the vicinity, the grove is conspicuous.

Anchorages.—The recommended anchorage for large vessels in Oura Wan is in 27m, fine sand and mud, off the village of Nabigo.

The recommended anchorage for small vessels is in 5.5 to 7.3m, fine sand and mud, about 0.3 mile S of Matsu Saki.

The anchorages become unsafe during bad weather. In 1981, a vessel anchoring in position 26˚30.15'N, 128˚05.45'E, offshore of Oura Wan, lost an anchor because of coral heads. This would indicate the charted bottom characteristics cannot be depended upon and anchorage in that area is not recommended.

Tenniya Saki (26˚34'N., 128˚09'E.) is a conspicuous narrow point, 1 mile NE of Banno Saki; several pointed rocks are 0.25 mile SE.

Ginan Saki (26˚38'N., 128˚14'E.) has been reported radar conspicuous at 11 miles.

Aha Ko (26˚43'N., 128˚18'E) has a conspicuous rock, 32m high, close off the S entrance point of the cove.

Adaka Shima (26˚44'N., 128˚20'E.) always has eddies within about 1 mile seaward of the reefs extending from the island.

Anchorage.—Temporary anchorage, protected from winds from the W through N, to NE, can be obtained, in 12.8 to 18.3m, between the reefs off the village of Ada and those on which lies Adaka Shima, but local knowledge is essential.

Aka Saki (26˚49'N., 128˚19'E.) is a reddish point, about 183m off, which is a conspicuous rock connected to the coast by an exposed rock shelf, 8.8m high.

Iheya Retto

7.33 The Iheya Retto is composed of five islands, Iheya Shima, Izena Shima, Gushikawa Shima, Noho Shima, and Yanaha Shima, together with various above-water rocks and islets. The group is centered about 19 miles WNW of Hedo Misaki, the N point of Okinawa Shima.

Iheya Shima (27˚03'N., 127˚59'E.), the largest and northernmost of the group, is surrounded by coral; two small harbors on the SE coast are for small vessels only. The island from E or W appears as a row of islands, because of its several peaks separated by deep valleys. Aha Take, the 211m S peak, is sharp and stands out at a distance. Gayo Take, the highest peak, is 294m high and about 1.1 miles NE of Aha Take.

Several rocks extend seaward from the N tip of the island, which is marked by a light and strong tide rises occur about 2.5 miles offshore.

Gushikawa-Hokuro, a channel with a depth of 10.9m, lies between the S end of Iheya Shima and Gushikawa Shima; the channel has strong tide rips often making navigation for small vessels impossible during the winter. The flood tide flows W and the ebb tide E.

A submarine cable is laid between Iheya Shima, S extremity, and Izena Shima.

Noho Shima, close W of the S tip of Iheya Shima, is a flat-topped island; several rocks that uncover are W of the island and there are tide rips S of them.

Gushikawa Shima, SE of the S end of Iheya Shima, is a low, long, and narrow islet surrounded by coral.

Izena Shima has a 129m summit; Ona Yama, in its NW part, has a heavy growth of trees and is conspicuous.

A fish haven lies 1 mile W of the SW point of the island.

Yanaha Shima, the S island of the Iheya Retto group, is surrounded by coral.

Amami Gunto

7.34 The Amami Gunto group of islands extend in a NE-SW direction between Okinawa Gunto and Tokara Gunto, and consists of Amami-O Shima, Kakeroma Shima, Yoro Shima, Uke Shima, Kikaiga Shima, Tokuna Shima, Okinoerabu Shima, Yoron Shima, Tori Shima, and other smaller islets.

There are several types of poisonous snakes in the islands as well as poisonous sea snakes in the surrounding waters.

Inhabitants engage in agriculture, fishing, and textile-making. Products include sugar, fish, sweet potatoes, and some copper.

Winds—Weather.—Most of the precipitation in the islands group is in the SW part, decreasing farther NE. There is generally little fog, although, an occasional thick fog might occur in the vicinity of Amami-O Shima between March and June.

Yoron Shima

7.35 Yoron Shima (27˚03'N., 128˚27'E.) is comparatively flat, cultivated, and has a few trees on it. The coasts of the island consist mostly of cliffs of coral and white sand beaches. About the middle of the S side of the island, is a conspicuous steep cliff. A light stands on Aka Saki, the SE extremity of Yoron Shima.

Chabana Ko, on the NW coast of Yoron Shima, is much encumbered by reefs, but provides anchorage and berthing for small boats.

There are tide rips off the SW side of Yoron Shima.

A submarine cable extends to a point about 35 miles ENE of Yoron Shima.

Okino-Erabu Shima

7.36 Okino-Erabu Shima (27˚22'N., 128˚35'E.) is a wooded island. The SW coast is mostly low coral cliffs, the N coast is mainly cliffs, and the SE coast is low.

Inobe is a village on the N coast of Okino-Erabu Shima in a position about 4 miles SW of Kunigami Saki, the NE extremity. Temporary open anchorage, during SE winds, can be obtained on the seaward side of the reefs fronting the village.

A mole extending 400m NW from the shore provides, on its SW outer part, a quay that is 160m long, with an alongside depth of 8m. Range lights lead towards this port. The port and anchorage should only be used by vessels with local knowledge.

Radio towers, reported to be conspicuous, stand 2 miles WSW of the NE end of the island and 1.5 miles NNE of O Yama. A domed building is reported to stand close N of the latter tower.

Kunigami Saki (27˚27'N., 128˚43'E.) is very low and marked by a hill, 61m high, covered with pine trees that show up well from most directions.

This point is marked by a light and an aeronautical radiobeacon. A fish haven lies about 8.5 miles SE of Kunigami Misaki Light.

Saotsue Yama (27˚23'N., 128˚37'E.) rises 135m on the SE coast of Okino-Erabu Shima; it is a somewhat conspicuous hill covered with large pine trees.

Wadomari Ko (27˚24'N., 128˚40'E.) is a small harbor protected by a breakwater on its S side and a detached breakwater S of it. Range lights, in line bearing 282.8˚, are available for entering the harbor through an opening in the reefs. A wharf, with a depth of 7.5m alongside and 150m in length, fronts the shore at China Gyoko and is joined to it by a causeway extending E. There is a directional light, with the center of the white sector bearing 026˚, situated 0.1 mile N of the wharf. Room to maneuver off the wharf is very restricted, owing to the reef. A small landing quay is situated 0.5 mile N of the wharf.

Tides—Currents.—Near the N side of the island, the flood tide flows W and the ebb flows E; farther out it is confused and variable.

Near the S side of the island the flood tide flows E and the ebb SW, but these currents are unstable and affected by the winds and sea currents and sometimes they will flow E or SW all day at a rate of up to 2 knots.

Anchorage.—Cargo and passenger vessels over 1,000 grt usually anchor about 0.3 mile offshore, in 20.1 to 25m. This is a temporary anchorage for vessels with local knowledge.

A submarine cable is laid from the coast close NE of Wadomari to Tokuno Shima.

Tokuno Shima

7.37 Tokuno Shima (27˚45'N., 128˚58'E.), a mountainous island, has Isen Saki as its S point.

Inutabu Misaki, on the W coast of the island about 5 miles NW of Isen Saki, has a gradual slope on its SE side, but close NE of it there is a steep and conspicuous cliff rising abruptly from the waters edge. Tide rips occur about 1 mile SW of the point, especially at springs. A radio tower stands on Inutabu Misaki and a multi-story building stands 3 miles E. Both are reported to be conspicuous.

Inutabu Take, about 3.8 miles ENE of the cape, is a pointed wooded peak at the S end of a spur of the central chain of mountains, and appearing isolated, is a conspicuous mark.

Hetono Ko (27˚49'N., 128˚54'E.), about 5.5 miles N of Inutabu Misaki, is a small bay marked by a light; a small pier in the bay can accommodate small vessels.

Aspect.—There is a white light on a mountain on the S side of the entrance of the bay. A shrine near the light is clearly visible during the day. A submerged rock lies approximately 600m WSW of the shrine, and a breakwater, approximately 150m long, extends N 140m E of the rock. The village office, approximately in the middle of the village (27˚49'N., 128˚55'E.), and two chimneys S of the office, are also landmarks; during the winter, the sparks from the chimneys can be used as landmarks at night.

Anchorage.—Temporary anchorage, with shelter from E winds, can be obtained by large vessels, in 25 to 30m, sand, about 0.3 mile WNW of the S entrance point of the harbor, but the depths are greater than 100m at a distance of 0.3 mile off the entrance. To avoid the shoal on the S side of the entrance, the anchorage should be approached from NW.

A submarine cable laid from a pattern of large buoys off of Tokuno Shima is landed at a point between Arumi Wan and Kawata Wan. An area of 0.1 mile centered over the cable to a distance of 23 miles offshore is designated a submarine cable protective area.

There are wide rocky reefs along the N and S shores of the harbor, but vessels can reach the pier safely by entering the harbor with the E extremity of the pier bearing 090˚. Vessels entering the harbor from the S must be careful of a shoal lying about 0.3 mile WSW of the above-mentioned shrine. Floating fish havens are occasionally set on the SW side of the island.

7.38 Kuro Se (27˚53'N., 128˚54'E.) are two rocks, each 4.7m high, lying close inshore; from certain directions they are somewhat conspicuous.

Kanami Saki (27˚53'N., 128˚59'E.), the NE point of Tokuno Shima, is a spur descending NE from a conspicuous hill, 251m high.

Tombara Iwa (27˚55'N., 129˚00'E.) is a group of four rocks; the highest has a reddish pointed summit. Tide rips occur N and S of these rocks.

Small vessels with local knowledge can obtain temporary anchorage during N winds, in less than 36.6m, rock and shingle, within 0.4 mile of the coral reef off the village of **Omonawa** (27˚40'N., 128˚58'E.). A submarine cable is laid from the coast close E of Omonawa to Okino-Erabu Shima.

Kinen Saki (27˚40'N., 129˚00'E.) is low and flat, and close to its S side there is a somewhat conspicuous rock.

Kametsu Hakuchi, a small partially-sheltered gap in the reefs, lies off the village of Kametoku, about 1.3 miles N of **Kongan Saki** (27˚43'N., 129˚01'E.). The gap is about 183m wide with depths of 7 to 23m. An 11m patch lies nearly in the middle of the outer part of the harbor. The inner harbor is protected by two breakwaters. A light stands at the head of the inner S breakwater.

Anchorage.—Small vessels with local knowledge can obtain temporary anchorage in fine weather, in 7.3 to 22.9m, somewhat sheltered from W winds, in Kametsu Hakuchi.

Fairly safe anchorage, sheltered from S and W winds, can be obtained, in 6.9 to 11.4m, close S of the low point forming the N side of the bay at **Ketoku** (27˚49'N., 128˚59'E.).

San Ko (27˚52'N., 128˚58'E.) affords anchorage to small vessels with local knowledge, in 5.5 to 15.5m, sand, protected by mountains on its S, W, and N sides, but the holding ground is poor and the anchorage is exposed to NE and E winds which send in a swell; moreover, with SW winds, squalls descend from the mountains and raise a sea that causes vessels at anchor to roll heavily.

Io Tori Sa

7.39 Io Tori Sa (27˚52'N., 128˚14'E.), isolated from and well to the W of the other islands of the Amami Gunto group, is an active volcano faced on all sides by steep cliffs. The last severe eruption was in 1969.

Two conspicuous peaks rise on the island, the N, 211m high. The trees and undergrowth around the N peak are dead, the earth is of a yellowish-brown color, and large quantities of smoke rise constantly from its SW side. The S peak is sharp, and S of it is a dark red landslide that is very conspicuous from the N and S.

In 1985, it was reported that no smoke was being emitted from the volcano.

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In 2001, it was reported that a strong sulfur odor could be smelled as far as 6.5 miles away.

A fish haven lies 33 miles W of Tori Shima

Anchorage.—Small vessels can anchor close to a landing place near the SW side of the island, in 23.8m, black sand and shells, with the S peak bearing 042˚ and distant about 0.4 mile.

Yoro Shima

7.40 Okachi Yama (28˚02'N., 129˚10'E.), the summit of Yoro Shima (28˚01'N., 129˚10'E.), is a good landmark.

Abujiri Saki (28˚04'N., 129˚10'E.), the N extremity of Yoro Shima, is faced with conspicuous reddish cliffs.

Yoroshima Kaikyo, a strait between Yoro Shima and Uke Shima to the E, is only available to small vessels with local knowledge.

Uke Shima

7.41 Okinokuwa (28˚00'N., 129˚15'E.) is a group of three above-water rocks lying off the S extremity of Uke Shima (28˚01'N., 129˚10'E.); the highest is conspicuous.

Kiyamanoko (28˚01'N., 129˚17'E.) is a conspicuous rock with some grass on its summit.

Naga Se, about 0.6 mile N of Kiyamanoko, is always marked by tide rips.

Tande Shima (28˚03'N., 129˚15'E.) and Kotande, farther N, lie on a shoal spit extending N from the middle of the N side of Uke Shima; heavy tide rips are formed in the vicinity.

Small vessels with local knowledge can obtain fairly-sheltered anchorage in either Ukeamuro or Ikechi, the two small bays on the N side of Uke Shima; these anchorages are better than those described below in Shodan Wan and Ikomo Wan.

Caution.—Submarine cables are laid from the coast NW of Ikechi to the S coast of Kakeroma Shima.

Ukeshima Kaikyo

7.42 Ukeshima Kaikyo (28˚03'N., 129˚15'E.) is a strait between Uke Shima on the S and Kakeroma Shima on the N.

Shodon Wan (28˚04'N., 129˚18'E.), on the N side of Ukeshima Kaikyo, affords fairly sheltered anchorage to vessels with local knowledge, but winds from the E and S send rollers into the bay.

Ikomo Wan (28˚05'N., 129˚15'E.), also on the N side of Ukeshima Kaikyo, is too deep to afford anchorage to any but small vessels, which, with local knowledge, can obtain landlocked anchorage in a cove on the W side of its head.

Submarine cables are laid from Ketomi in Ikomo Wan S to Uke Shima.

Ka Saki (28˚04'N., 129˚13'E.) is faced with conspicuous cliffs; on it is a round-topped mountain with a fairly conspicuous summit.

Sukomo Banare (28˚07'N., 129˚10'E.), an island N of the W entrance to Ukeshima Kaikyo, is faced with cliffs almost everywhere, and on its NW part are some trees.

Yu Banare, about 0.8 mile NW of Sukomo Banare, has a pointed summit.

Rocks and shoals are located N, NW, and W of Yu Banare and Sukomo Banare. Vessels navigating in these areas should refer to the chart.

Kakeroma Shima,(28˚07'N., 129˚15'E.) on the N side of Ukeshima Kaikyo, appears to form part of Amami-O Shima. A ridge of wooded hills extends almost throughout its length.

Oshima Kaikyo

7.43 Oshima Kaikyo is a strait separating Kakeroma Shima from the SW coast of Amami-O Shima.

Kaitsu Saki (28˚07'N., 129˚23'E.) lies on the E side of the SE entrance of Oshima Kaikyo; a short distance N of it is a conspicuous black rock. A light stands on Kaitsu Saki.

Mutade Yama, about 0.8 mile N of Kaitsu Saki, is a conspicuous conical hill, the E side of which is faced with a steep cliff almost to its summit.

Koniya Ko (28˚08'N., 129˚19'E.) is a refuge harbor that comprises the whole area of the SE part of Oshima Kaikyo. Within the area, a number of coves lie on the NE and SW sides of the strait. The anchorage position is off Koniya in Koniya Hakuchi, as the other coves are too narrow, or, like the strait, are too deep for safe anchorage.

Tides—Currents.—The MHW interval at Koniya Ko is 6 hours 47 minutes; spring tides rise 1.8m and neap tides rise 1.5m.

Depths—Limitations.—Small vessels can berth at Koniya Ko. A basin protected, from S by two short breakwaters, lies on the E side of the Central Wharf. A light stands at the head of each breakwater. Reclamation has been carried out 0.3 mile SE of the basin. Several radio masts in the town are conspicuous.

Anchorage.—Anchorage, with protection from winds between the N and E, can be obtained by vessels with local knowledge, in 29 to 31m, in Koniya Hakuchi, off the town of Koniya, but caution is necessary as the tidal currents are very strong in mid-channel, and shallow water extends for some distance offshore in the vicinity of Koniya.

Satsukawa Wan (28˚10'N., 129˚14'E.) offers good protection against winds from all directions, but because of great depths, is not a good anchorage for small vessels; however, it is reported usable by large vessels up to 10,000 dwt during typhoons and heavy weather.

Nake Some, a coral patch with a depth of 14.6m, lies 1 mile S of the N entrance point, to Satsuk Awa Wan.

Kuji Wan (28˚12'N., 129˚16'E.) is surrounded by wooded mountains and has four coves at the head of its N branch. Kuji Ko, the W of these, is a harbor of refuge. Small vessels, with local knowledge, can obtain anchorage in Kuji Ko, in 18.3 to 21.9m; the bottom is of broken coral, mud, and pebbles, and the holding ground is fairly good.

Amami-O Shima

7.44 Amami-O Shima (28˚20'N., 129˚26'E.) is mountainous, but there are no conspicuous peaks. Akagina Hanto, the NE part of the island, is joined to the main portion by a low isthmus, so that from N or S it appears as an island.

7.45 West side of Amami-O Shima.—Sotsuko Saki (28˚15'N., 129˚08'E.) is fringed with rocks extending a short distance offshore, the largest of which is pointed, 35m high, and conspicuous from N or S.

Caution.—Caution is necessary when approaching Amami-O Shima not to mistake Sotsuko Saki Light for **Borose Saki Light** (28˚27'N., 129˚32'E.).

Yakiuchi Wan is entered between **Yadon Saki** (28˚16'N., 129˚11'E.) and Kamma Saki, about 1 mile NNE.

Eboshi Yama (28˚17'N., 129˚12'E.), the summit of Edato Shima, is a fairly conspicuous pointed mountain, with a clump of trees on the W side of its summit. Aka Saki, the SE extremity of Edato Shima, is of a reddish-brown color and has pine trees on it.

Anchorage.—Amuro Wan, about 1.3 miles E of Yadon Saki, is exposed to wind and sea between the W and N, but affords temporary anchorage to small vessels with local knowledge, E of Naki Sone in about 31m, sand.

Nagara Wan, about 3.5 miles E of Yadon Saki, affords anchorage to small vessels with local knowledge, in 18.3 to 36.6m, but the entrance, between shoals on either side, is only about 183m wide.

Taken Byochi, at the head of Yakiuchi Wan, affords the best anchorage, in 21 to 32m, mud, but local knowledge is essential.

7.46 Oto Yama (28˚19'N., 129˚16'E.) has a flat summit that is not conspicuous, but two or three summits on a ridge decreasing in height N from the mountain are conspicuous.

Tategami (28˚20'N., 129˚16'E.) is a rock, 64m high, and conspicuous from the E or W. When viewed from the N, the rock is difficult to distinguish because of the similarity in color to the cliffs behind it. A light is shown on the islet.

Naon (28˚20'N., 129˚19'E.) is a fishing village at the mouth of a river; about 0.3 mile N of the village there is a conspicuous, conical hill, 299m high.

Asan Saki (28˚21'N., 129˚19'E.) has a pointed summit and is covered with grass.

Yamatohama Wan (28˚22'N., 129˚24'E.) is only available to small vessels with local knowledge. Violent wind gusts blow down from the surrounding hills.

Miyako Saki (28˚23'N., 129˚24'E.) is a summit covered with dwarf bamboos and appears green.

Borose Saki (28˚27'N., 129˚30'E.) on which stands a light, is a grassy point, fringed with rocks.

7.47 Naze Ko (Nase Ko) (28˚23'N., 129˚30'E.) is a natural harbor. The new harbor, built on reclaimed land, is N of the Breakwater No. 1. Depths alongside range from 7.2 to 9m. The Central Wharf in the commercial harbor has depths alongside of 2.6 to 6.6m. The fishing harbor S of the Central Wharf has a quay with depths of 2.5 to 3.1m alongside. There is considerable precipitation here year round. Winters are warm and summers are not extremely hot. The MHW interval is 6 hours 50 minutes; spring tides rise 2m and neap tides rise 1.5m. There is a harbormaster.

There is also a W breakwater situated on the W side of Naze Ko, 0.5 miles S of Tategami. A light is shown from its head. The E breakwater is situated on Yagi Shima, from which a light is shown from its head. The E side of the fairway is marked by a lighted buoy, which is moored on the edge of the reef fringing the E shore, 0.35 mile S of the E breakwater head. A new breakwater is being constructed 0.4 mile N of the E breakwater head.

Anchorage.—The anchorage is open N and is dangerous when rollers sweep in that direction; the bottom, however, is mud and, except during N winds, the anchorage is good. The best position to anchor is off the village of Sadekuma, about 0.5 mile S of Yagi Shima, in 23 to 27m. Some vessels anchor, in 25m, with Tategami Light bearing 000˚ and the village of Sadekuma bearing 077˚.

Anchoring is prohibited in the central area of the waterway and also in the area in front of Sinko-Ganpeki embankment.

Caution.—The harbor is fringed with reefs extending as much as 0.2 mile offshore; the edges of the reefs are steep-to and are usually marked by a change in the color of the water.

Because the entrance to Naze Ko is similar to many other places along this coast, vessels on the regular run to the port make for either **Sotsuko Saki** (28˚15'N., 129˚08'E.) or **Imai Saki** (28˚29'N., 129˚37'E.) and then follow the coast to the entrance to the harbor.

7.48 Amai Saki (Imai Saki) (29˚28'N., 129˚37'E.) has a conspicuous hill, 191m high, close W of it.

Kasari Wan is entered between Amai Saki and **Gamo Saki** (28˚30'N., 129˚39'E.), about 2 miles NE.

Tatsugo Hakuchi, on the W side of Kasari Wan, is exposed NE, but in it there are no tidal currents. The roadstead is protected from the S and W winds by mountains and hills, one of which, Odake, on its SW side about 2.5 miles SSW of Amai Saki, is covered with trees and is a conspicuous feature.

Akagina Ko, the E inlet at the head of Kasari Wan, is exposed NW, heavy seas are frequently experienced, and the inlet is only suited to small vessels with local knowledge. Tategami Iwa, on the W side of the entrance of Akagina Ko, is a black conical rock. Taka Dake, on the E side of Akagina Ko, is the highest hill in the vicinity; it is flat-topped and has some pine trees on its summit. Ogari Yama, about 2 miles S of Taka Dake, has a wedged-shaped summit.

Anchorage.—Uramur Ko, the W of the inlets at the head of Kasari Wan, affords anchorage to small vessels with local knowledge, in 11 to 27.4m, mud.

Akaogi Ko, the middle inlet at the head of Kasari Wan, affords anchorage in the middle of the W bight at its head, in 11 to 27.4m, sand, but it is exposed N, and the S shore being the low isthmus that joins Akagina Hanto to the main portion of Amami-O Shima, it is unsafe with S winds.

7.49 East side of Amami-O Shima.—Isu Wan (28˚08'N., 129˚23'E.) is entered between Kaitsu Saki (28˚07'N., 129˚23'E.) and Ma Saki, about 3 miles NNE; it is only available to small vessels with local knowledge.

Futatshuhanare Iwa (28˚11'N, 129˚26'E.) consists of two rocks; a short distance N of them is a conspicuous waterfall, 10m high.

Ichi Saki (28˚13'N., 129˚29'E.) is a crumbling cliff. Mi Se is a reef about 0.7 mile offshore from Ichi Saki.

Sumiyo Wan is entered between Ichi Saki and Nakahise Saki, about 7 miles NE; in its SW and NW corners, respectively, are Sumiyo Ura and Sutaru Ura, both of which are ex-

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posed to heavy rollers during E winds. West of the head of Sutaru Wan, there is a lagoon that can be entered by small vessels at HW in calm weather.

Anchorage.—With offshore winds, anchorage can be obtained, in 21 to 29.3m, sand, off the entrance of Sumiyo Ura, N of Tobira Shima. Small vessels with local knowledge can obtain anchorage in Sumiyo Ura, in 1.8 to 9.1m.

Nakahise Saki (28˚19'N., 129˚33'E.) should be given a wide berth. Ho Ze is a reef about 2.5 miles offshore from Nakahise Saki.

Sedan Iwa (28˚28'N., 129˚44'E.) is a rock awash that is usually marked by breakers.

Kasari Saki lies in position 28˚32'N, 129˚41'E. Hira Se and Tombara Iwa, a black rock, lie, respectively, about 1.25 miles E and 2 miles NE of Kasari Saki; heavy tide rips and eddies are formed in their vicinity.

Kikaiga Shima

7.50 Kikaiga Shima (Kikai Shima) (28˚19'N., 129˚59'E.) has been reported radar conspicuous at 24 miles.

There is a plateau at the NE end of Kikaiga Shima, from 73 to 79m high, SW of which and separated from it by a slight fall, is another one, from 197 to 210m high. The latter plateau is named Hyakuno Dai, and its SE side is cliffy. West of Hyakuno Dai, there are sandy hills from 31 to 61m high; the higher ground is treeless pasture land, but the lower levels are cultivated.

A conspicuous chimney stands on Situru Saki, the S extremity of Kikai Shima; a light stands 0.5 mile N of the point. A fish haven lies 8 miles N of Tonbi Saki and another lies 8 miles S of Situru Saki.

Somachi Ko (28˚20'N., 130˚00'E.) provides shelter from all except SE winds to small vessels with local knowledge. A small pier at the village of Somachi is about 79m long, with a depth of 4.7m alongside. Breakwaters extend S from Kyora Hana, the N entrance point and E from Naga Saki, the S entrance point. It can accommodate a vessel of about 300 grt.

At **Wan Ko** (28˚19'N., 129˚˚56'E'.) is an unloading embankment, 90m long, with a depth of 5 to 7.2m alongside on the N end of the E shore. Further to the NW is an embankment, 135m long, with a depth of 7.5m alongside. This harbor is used by ferries of 1,500 grt. A light is shown from the NW end of the wharf.

A detached breakwater was constructed 0.2 mile WNW of the above breakwater.

A submarine cable is laid from a position about 1 mile E of Wan Minato to the area 2 miles W of Myogan Saki.

Ogame Sho (28˚15'N., 129˚53'E.), a reef about 2.5 miles SW of Kikaiga Shima, is marked by breakers in rough weather, and by a difference in the color of the water in calm weather.

A danger area extends S from Kikaiga Shima.

Sandon Iwa (28˚45'N., 129˚46'E.) is a small isolated group of rocks about 14 miles NNE of the N point of Amami-O Shima. The highest rock is 10m high, black, and conical.

Tokara Gunto

7.51 Tokara Gunto (29˚40'N., 129˚40'E.), a group of mountainous islands and islets, are of volcanic formation and all, except for Takara Shima (29˚08'N., 129˚12'E.) and Taira Shima (29˚41'N., 129˚32'E.), emit smoke; there are hot springs in the old craters. The coast of the group are mostly steep cliffs or rocky precipices from which the land rises abruptly and is covered with bamboo and a variety of trees. There is little arable land and there are no sheltered anchorages.

The group has been reported to be a good radar target at 21 miles.

The group of islands extend 95 miles NE from **Yokoate Shima** (28˚48'N., 129˚00'E.).

The inhabitants are engaged mainly in fishing and farming.

Winds—Weather.—The sea surface is generally tranquil during the summer monsoon. After the rainy season passes in June, there are many fine days with occasional onsets of heavy rainstorms. From mid-August, the wind gradually begins to go around to the N, then it becomes strong from September on and the seas run high.

Tides—Currents.—The main current of the Kuroshio strikes the W side of the islands and divides to N and S, causing tidal races at the N and S ends of the islands. It also appears that there is a confluence with a branch current in the vicinity of the SE side of the islands, which causes tide rips in the vicinity of their S end. If the wind direction is in opposition to the current direction the waves become strikingly higher and navigation by small craft becomes dangerous. The phenomenon is called Shiomakura (tide pillow) colloquially. It is reported that motor vessels with a speed of 5 knots have been unable to overcome the tidal races and rips at the N and S end of Kaga Shima. The tidal current, in general, flows along the coastline of the islands, the flood tide flowing N to NW and the ebb tide flowing S to SE, but there many occasions when the pattern is confused because of the influence of sea currents. There are many locations where a countercurrent is generated, near to the coast of the islands because of the effects of such sea and tidal currents and in summer it is reported that there is the occasional onset of a tidal wave.

It is reported that the tidal current flows E through the Tokara Kaikyo and that its rate is 4 to 5 knots, when a WSW to W wind is blowing.

Yokoate Shima

7.52 The E part of **Yokoate Shima** (28˚48'N., 129˚00'E.) is the crater of an extinct volcano, but the W part is dormant. The entire island is surrounded by cliffs and is reported to be a good radar target at 20 miles.

Tidal currents are strong; eddies form between Yokoate Shima and **Kaminone Sho** (28˚50'N., 129˚13'E.), about 2 miles to the N. An obstruction has been reported 2.25 miles NNW of Kaminone Sho.

Takara Shima

7.53 Takara Shima (29˚08'N., 129˚12'E.) has a mountain near its middle covered with bamboo; the gentle slopes at the foot of the mountain are cultivated. A large radio tower stand on the highest point of the island.

Anchorage.—Takarashima Hakuchi, on the N side of Takara Shima, off the village of Maegomori, affords temporary open anchorage to small vessels with local knowledge, in 12.8

to 27.4m, but the depths increase very rapidly, and the tidal currents are very strong; it is only available during S winds.

Kuroyamano Se is a shoal with a depth of 6.9m, extending about 2.3 miles SE of Areki Saki, at the S point of Takara Shima. A light stands on Areki Saki.

Kotakara Shima

7.54 **Kotokara Shima** (29˚13'N., 129˚20'E.), very steep on its S side, is covered with bamboo; a house on the side of the hill is prominent. Oiwaya is a pointed wooded hill on the W side of the islet.

Ko Shima, about 0.8 mile E of Kotakara Shima, has a dome-shaped, tree-covered summit. A pillar-shaped rock is on the NE side of the islet and a drying rock, usually marked by breakers, is close off the NW side of the islet. Several dangerous reefs E of Ko Shima are marked by breakers.

In 1982, submarine volcanic activity was reported in the vicinity of the 64m bank, 9 miles WNW of Kodakara Shima.

The position of Oki Zone, a reef about 4 miles NNE of Kotakara Shima, is indicated in rough weather by the condition of the water surface.

Two more areas of relatively shoal water lie along roughly the same latitude, 13 and 30 miles W of Oki Sone. In extreme weather conditions, the sea breaks over these features.

Akuseki Shima

7.55 **Akuseki Shima** (29˚27'N., 129˚36'E.), reported to be a good radar target at 26 miles, has its 587m summit on its W part. The summit is covered with trees and a range gradually decreasing in height and with clumps of bamboo on it trends SE. The coasts are almost all high cliffs and a village near some cultivated land is on the SW part. The island is marked by a light.

Tide rips occur off Nizumi Saki, the rocky SW point of the island. Large breakers have been reported in the area of Gogo Sone, an off-lying bank 26 miles W of Akuseki Shima, having a depth of 89 fm.

Suwanose Shima

7.56 On Take, the summit of **Suwanose Shima** (29˚38'N., 129˚43'E.), rises in the middle of the island and consists of volcanic debris and lava; no grass or trees grow on its upper half and its summit is comparatively flat, but there is a conspicuous rock on its NW part.

On the NE side of the mountain there are high cliffs separated by deep gullies, from the bottom of which smoke is emitted and the summit is nearly always obscured; eruptions and explosions sometimes occur. In 1955, brownish smoke from a seabed eruption was observed in a position about 5 miles E of Suwanose Shima.

Tomidachi Take, at the NE end of the range that traverses the island, is 540m high and conspicuous; Negami Take, at the SW end of the range, is 354m high; though, there are several peaks between these two mountains and On Take, they are usually enveloped in clouds or smoke.

The S part of Suwanose Shima is high and, except on a hillock where there is a village and some cultivated land, it is overgrown with bamboo; the N side of the island is wooded.

Naga Saki is the S extremity of Suwanose Shima; tide rips occur off the point.

Tori Saki, the W extremity of Suwanose Shima, consists of dark red cliffs near which is a stream of stones and lava from an old crater.

Furusato Saki lies 0.2 mile NE of Tori Saki; after rain, there are several small waterfalls between Furusato Saki and Su Saki, the NE extremity of Suwanose Shima.

Su Saki, off which there are tide rips, ends in a pointed rock; on the E side of the point, the coast rises precipitously, and on this side is a waterfall.

Kiriishi Hakuchi is a small bay on the E side of Suwanose Shima, about 0.5 mile NNE of Naga Saki. Small vessels with local knowledge can obtain anchorage, sheltered from SW winds, over a bottom of sand. Caution is necessary because three submarine cables are laid from this part of the coast to the other islands of Tokara Gunto. Reference should be made to the chart.

Suwanose Suido, the channel between the islands of Akuseki Shima and Suwanose Shima, has the center of its axis along the approximate axis of the Kuroshio Current, which attains a rate of 2.5 knots.

Taira Shima

7.57 **Taira Shima** (29˚41'N, 129˚32'E.), with the highest of the hills at the S end of the island, is 114m high. There is a village on a hill on the W side of the island, near which is some cultivated land. The island is 246m high.

Dei Se is a group of rocks, of which the highest is 68m high, lying close off the S extremity of Taira Shima; the passage between these rocks and the island should not be attempted.

Nakano Shima

7.58 **Nakano Shima** (29˚51'N., 129˚51'E.) is separated from Suwanose Shima by Nakano Shima Suido. There is a strong E ocean current in the strait. O Take, the summit of the island, is the highest mountain in Tokara Gunto; sulfurous fumes are emitted from its summit and from places on its NE side. A range, gradually decreasing in elevation, extends E from a somewhat conspicuous mountain, 530m high, near its S extremity. The coasts of the island are mostly rocky precipices on high cliffs.

Hishagono Hana, the S extremity of Nakano Shima, is a cliffy headland, 184m high. About 1 mile E and NW of the headland there are cliffs from 104 to 183m high, the tops of which are densely wooded and over which are some small waterfalls. Otategami is a pillar-shaped rock, close inshore, about 0.2 mile NW of the headland; its summit is serrated and conspicuous from NW.

Maeno Hama is a small bay about 1.8 miles NW of Hishagono Hana, at the head of which is a wooded hill surmounted by the village of Sato; in the NW part of the village there is a white-washed school, standing at an elevation of 57m. The school is conspicuous when approaching from the SW. The

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shores of the bay are fringed with rocks, the outer edges of which are steep-to.

Anchorage.—Temporary anchorage can be obtained by small vessels with local knowledge, with the school at Sato bearing 039˚, distant about 0.8 mile, but it is reported that, because of the strength of the tidal current, difficulty may be encountered in taking up this position.

7.59 Nohori Saki, the NW extremity of Nakano Shima, is a rocky point, about 21.3m high; close off it are some curiously-shaped rocks.

Kusazeno Hana, about 1 mile E of Nohori Saki, is a fairly level headland, 62m high, and at its extremity there is a large rock in the form of an arch.

Seri Misaki, the SE extremity of Nakano Shima, is flat-topped and about 37m high; close off it there is a pillar-shaped rock of the same elevation. Jinnyomu Take, about 0.4 mile NW of the cape, is 171m high and conspicuous.

Koyama Shima, a rocky islet about 30m high, with some bushes and grass on its summit, lies about 0.4 mile W of Seri Misaki.

Anchorage.—Small vessels with local knowledge can obtain temporary shelter, either E or W of Koyama Shima.

Gaja Shima

7.60 **Gaja Shima** (29˚54'N., 129˚32'E.) has been reported radar conspicuous at 20 miles. Ara Saki, the SE extremity of Gaja Shima, is of an ash-gray color.

Kobatategami, on the NW side of the island, is a conspicuous pillar-shaped rock, 122m high.

The remains of an abandoned village are situated on a cliff, about 60m high, on the N side of the island. Maetategami, N of the village, is very similar to Kobatategami and 103m high.

Ko Gaja Shima

7.61 **Ko Gaja Shima** (29˚53'N., 129˚37'E.) is uninhabited. Its cliffy sides rise vertically from the sea; on its summit there are a few trees. It is reported that the smell of sulfur is noticeable near its N end.

Ogamino Se, a detached rock with a depth of 4.6m, lies about 1.5 miles N of Ko Gaja Shima; it is always marked by breakers. There are tide rips in this area.

Kuchino Shima

7.62 **Kuchino Shima** (29˚58'N., 129˚55'E.) is separated from Nakano Shima by Kuchino Shima Suido, in which the strong E current sometimes produces tide rips. Mae Take, the summit of the island, is a dark, conical, wooded mountain, 628m high. Hikisui Take, nearly 1 mile SE of Mae Take, is 448m high and has a rocky summit. Kamakura Takerises about 0.4 mile E of Hikisui Take, and on its S side are some cliffs; on its summit is a conspicuous pillar-shaped rock, 277m high. Hirino Dake, at the N end of the island, is covered with bamboo. Tide rips occur off the S part of the E coast of Kuchino Shima.

Anchorage.—Maeno Hama, on the E side of the N end of Kuchino Shima, affords temporary anchorage, sheltered from winds between the S and W, to vessels with local knowledge, in 9.1 to 20.1m, mud and sand, about 0.3 mile offshore. Heavy seas are sometimes experienced at this anchorage.

The open bay on the W side has the shape of an isosceles triangle, with Hira Se and Maru Se as the north end of the mouth of the bay provides anchorage. This is Kuchinoshima Hakuchi and consists of Nisino Hama. This bay affords temporary anchorage, according to the wind direction, to vessels with local knowledge, in 8.6 to 43m. This anchorage is probably the best anchorage in the Tokara Gunto group.

Vessels should refer to charts of this area. Submarine cables are laid from Nisino Hama to Nakano Shima.

Nishinohama Gyoko, a small fishing harbor, lies at the head of the bay, and is protected by N and S breakwaters. A light stands on the S breakwater head.

Gunome Misaki, the W extremity of Kuchino Shima, is a rocky headland, in the form of the horn of a rhinoceros, 94m high.

Aka Se is a small rock, reddish in color, which lies about 100m E of the tip of Serii Saki (the N extremity of Kuchino Shima). Two isolated rocks lie on the NW side of this island.

Me Se, about 4 miles NW of Serii Saki, is marked by a change in the color of the water in its vicinity; the currents are strong.

Caution.—An area lying in the W approach to Tokara Kaikyo, extending about 45 miles NNW from Me Se, is volcanic, and depths are liable to considerable change.

7.63 Tokara Kaikyo is a strait leading between the N end of Tokara Gunto and the SW islands of Osumi Gunto. Hira Se, marked by a light, is on the SW side of the strait in position 30˚03'N, 130˚04'E. The largest and highest rock, close W of which there is a white rock, is near the SW end of the shoal and is 28m high.

Caution.—The areas around Hira Se, **Uwano Se** (30˚12'N., 130˚04'E.), with a least depth of 14m and usually marked by ripples, and **Nakano Sone** (30˚18'N., 130˚08'E.) should be avoided, as unknown shoals may exist in their vicinities. The Kuroshio Current has been reported to attain rates of 3 to 5 knots in the strait.

Osumi Gunto

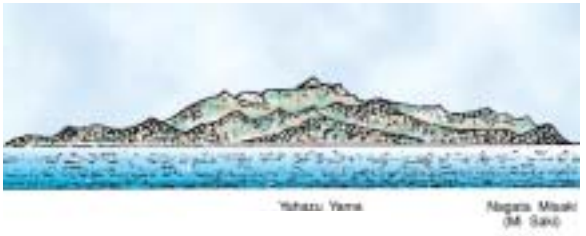
7.64 **Osumi Gunto** (30˚30'N., 130˚00'E.) is the NE group of islands forming Nansei Shoto (Ryukyu Islands); it consists of two islands of moderate size and six smaller ones.

Yaku Shima

7.65 **Miyanoura Dake** (30˚20'N., 130˚31'E.) rises nearly in the middle of **Yaku Shima** (30˚20'N., 130˚32'E.); it is steep-sided and has two summits, NW and SE of each other. There are several other peaks, but they are nearly always enveloped in clouds, and cannot be seen when close inshore because of the coastal mountains.

7.66 **Southwest and northwest sides of Yaku Shima.—**Nano Se (30˚14'N., 130˚25'E.) is a group of rocks. The channel between these rocks and the coast should not be attempted.

Anchorage.—Small vessels with local knowledge can obtain anchorage, sheltered from winds between N and E, be-



Yaku Shina—N coast

tween Nano Se and a sandy beach SE of the mouth of Kurio Kawa; the tidal currents in the vicinity of Nano Se are very strong, and in bad weather, tide rips are formed within about 4 miles SW of the rocks.

Nose Hana (30˚19'N., 130˚24'E.) close inshore, about 0.3 mile SE of it, is a flat-topped rock, with a black summit that is somewhat conspicuous from NW.

Nagata Misaki (Mi Saki) (30˚23'N., 130˚23'E.) is a conspicuous, steep, rocky headland, 55m high, from which the land rises steeply to Kawara Take, 1,328m high, a mountain covered with a forest of black trees. It has been reported that in summer, during strong S winds, a S current often attains a rate of 2 knots about 1 mile W of Nagata Misaki. This is purely local and likely to be associated with dangerous seas including tide rips. There is a light on Nagata Misaki. A ramark transmits from the vicinity of the light.

Anchorage.—Vessels with local knowledge can obtain temporary anchorage, sheltered from winds between E and S, off the mouth of the river on which stands the village of **Nagata** (30˚24'N., 131˚26'E.). Submarine cables are laid from the W coast of Yaku Shima in this area to Kutinoerabu Shima and Kagoshima.

7.67 **Senzokuno Hana** (30˚27'N., 130˚28'E.) is a rocky point, surmounted by a somewhat conspicuous pointed hill, 194m high.

Isso Ko (30˚27'N., 130˚30'E.) is a small bay protected by a breakwater. A light stands at the E end of the N breakwater. It is exposed NW and has a conspicuous beach of white sand at its head. Pine trees on the white sandy beach at the head of the bay and the white building of a meteorological station are good landmarks when entering the harbor.

A pier, 110m long, is situated on the E side of Isso Ko opposite the breakwater; it can accommodate a vessel of 2,000 grt. Two mooring buoys are anchored off the head of the pier. A vessel of 353 grt berths regularly at the breakwater.

Anchorage.—Except with winds between the W and N, sheltered anchorage can be obtained by small vessels with local knowledge, in Isso Ko, in depths decreasing from 29m, sand; with strong W winds, better shelter can be obtained in Moto Ura.

Yahazu Yama rises on the peninsula, the N extremity of which is **Yahazu Sak**i (30˚28'N., 130˚30'E.); it is a conspicuous dark hill, 142m high, covered with bushes, and with a double summit.

7.68 **Southeast and northeast sides of Yaku Shima.—**Between **Kuro Saki** (30˚14'N., 130˚27'E.) and **Komori Bana** (30˚18'N., 130˚39'E.) the coast is bold, with the land rising abruptly from the sea to heights of at least 30m, and then sloping back less steeply to the mountain ranges; most of these more gentle slopes are cultivated.

Anbo Ko (30˚19'N, 130˚39'E.) is a local harbor. At the village of Anbo, there are berths that accommodate vessels up to 1,000 and 1,500 grt. The depths alongside range from 4 to 5.5m. Anbo Light stands on the N side of the harbor entrance; an auxiliary light mounted on it illuminates the outer edge of a reef, 400m SSE. Vessels should navigate with caution; the entrance to the port is narrow and the current velocity is high. A detached breakwater has been constructed 0.3 mile E of the light.

Haya Saki (30˚22'N., 130˚40'E.) is faced with rocky cliffs, 36m high, and surmounted by dwarf trees; it is backed by a grassy plateau extending to the foot of the mountains, which is conspicuous from N or S. A light stands on the top of the cliffs of Haya Saki.

Nana Se is a 2.8m high rock, about 2.3 miles WNW of Haya Saki.

Anchorage.—Vessels with local knowledge can obtain anchorage, sheltered from winds between the S and W, off the village of **Kusukawa** (30˚24'N., 130˚36'E.); this anchorage is sometimes used in summer, when anchorage off Miyanoura becomes untenable because of the sea raised by strong NW winds.

7.69 Miyanoura Ko lies at the mouth of the Miyanoura Kawa in position 30˚25'N, 130˚35'E; the N side of the harbor is formed by a breakwater. A submarine wave height gauge is moored about 0.3 mile NE of the base of the breakwater and is connected to the shore by a submarine cable. The submarine cable runs NE to Tane-ga-Shima.

Aspect.—Goto Yama, about 0.8 mile S of the mouth of Miyanoura Kawa, is 255m high, has trees on its summit, but not on its sides, and is a conspicuous feature. Nataori Take, a wooded mountain, attains an elevation of 521m, about 1.3 miles NW of Goto Yama, and on the flat part of its shoulder, about 0.4 mile E of its summit, there is a conspicuous solitary pine tree, standing at an elevation of 200m. The white building and three chimneys of a power plant in the town are very conspicuous. On a clear day, a conspicuous white sandy beach at the mouth of Miyanoura Kawa, can be seen from 4 to 5 miles offshore.

Anchorage.—Vessels with local knowledge can obtain anchorage, sheltered from winds between the S and SW, in 7.3 to 14.6m, sand, off the mouth of Miyanoura Kawa; caution must be exercised, however, because shoals extend about 0.2 mile offshore in the vicinity of the mouth of the river.

Caution is also necessary because of a submarine cable close E of the mouth of the river.

Tsuka Saki (30˚26'N., 130˚34'E.) is a rocky, dome-shaped point, 19.8m high, that is surmounted by some dwarf trees.

Moto Ura, close E of **Yahazu Saki** (30˚28'N., 130˚30'E.), affords anchorage to small vessels with local knowledge, sheltered from winds between the S and W, in depths decreasing from 14.6m in its entrance, to less than 5m within 0.1 mile of

its head; the bottom is sandy, but the sea breaks with winds between N and E.

Tanegashima Kaikyo

7.70 Tanegashima Kaikyo (30˚20'N., 130˚47'E.) leads between the E side of Yaku Shima and the W side of the S end of Tanega Shima; vessels making use of it must exercise great caution to avoid the dangers SSW of Otake Zake, the SE extremity of Tanega Shima.

Tanega Shima

7.71 Tanega Shima lies with Zyoga Saki, its SW extremity in position 30˚21'N, 130˚52'E. The island has a fairly level ridge running through the greater part of its length, and there are few conspicuous landmarks. Takamineo Yama, the highest hill, rises about 18.5 miles NNE of Zyoga Saki, and for 3 miles S of it the ridge is of about the same elevation; it then falls and rises again to Nagayano, a plateau rising about 6 miles N of Zyoga Saki, S of which two or three spires gradually descend to the coast. With the exception of Nagayano, which is a moor, the entire island is thickly wooded.

Tanega Shima has been reported radar conspicuous at 17 miles.

7.72 West side of Tanega Shima—Kadokura Saki to Hako Saki.—The land SE of Shimama Saki (30˚28'N., 130˚51'E.) is level and cultivated; on it are some tall pine trees which are conspicuous from S and N. Heavy breakers are experienced in bad weather in the tide rip area W of the point. A light stands on the point. An obstructed fish haven lies close NE.

Shimama Hakuchi, a bay on the NE side of Shimama Saki, affords anchorage to vessels with local knowledge, in about 10.1m, sand, about 0.3 mile N of Ike Shima, a rock, 2.1m high, near the head of the bay. This anchorage affords fair shelter from all winds except those between the W and N.

Kutsuwa Saki, about 2 miles NE of Shimama Saki, is faced with steep cliffs.

Ara Saki (30˚36'N., 130˚57'E.) is about 8 miles NNE of Kutsuwa Saki; between them is a beach of white sand that is backed by a conspicuous white, sandy cliff.

Sumiyoshi Misaki (30˚40'N., 130˚57'E.) is a flat, wooded point.. Small vessels with local knowledge can obtain anchorage, sheltered from NW winds, in the bay on the E side of Sumiyoshi Misaki.

7.73 Nisinoomote Wan is entered between **Hako Saki** (30˚43'N., 130˚59'E.) and Ono Saki, about 0.8 mile NE. A breakwater projects N from Hako Saki. A light is shown at its head. A meteorological station, about 0.3 mile N of Ono Saki, and the town hall on the NE side of the bay, are useful landmarks. The S side of the bay is a sandy beach and on the same side of the head of the bay is a conspicuous cliff of red sand. Three submarine cables are at the head of Nisinoomote Wan; beacons stand on either side of the landing place.

Nisinoomote Ko, on the NE side of the bay, is a small artificial harbor, protected by breakwaters, in which there is a depth of 4m. Local weather signals are displayed at the meteorological station. A vessel of 1,000 grt berths regularly at one of the wharves, which vary from 100 to 200m in length, with depths of 3.4 to 4.1m alongside.

A new harbor lies on the S side of the reclaimed land S of the old harbor. Depths alongside the quays range from 4 to 7.5m. Vessels up to 5,000 grt can be accommodated.

Anchorage.—Nisinoomote Wan is exposed W, but affords good anchorage, sheltered from winds from other directions, in 5.5 to 9.1m, but local knowledge is necessary, and care must be taken to avoid the submarine cables.

Caution.—A covered rock, 4.2m deep, lies about 290m S of the light at the head of the W breakwater. A sunken ship lies about 260m SW of the light. In the central part of the bay are two obstacles, with depths of 2.2 and 2.6m.

Urata Wan (30˚49'N., 131˚03'E.) is a small bay; it is open N. Small vessels with local knowledge can obtain anchorage, sheltered from S winds, in 7.3 or 9.1m, sand, in Urata Wan.

7.74 East side of Tanega Shima.—Between **Kadokura Saki** (30˚20'N., 130˚53'E.) and **Otake Saki** (30˚22'N., 130˚58'E.), the coast consists for the most part of beaches of white sand, with two or three somewhat conspicuous points. Shimo-Nakano is a town situated about 2.3 miles NE of Kadokura Saki; E of it are some conspicuous white sandhills. A short distance W of Otake Saki there are some conspicuous red cliffs.

Otake Saki Light is shown from a conspicuous red cliff, nearly 1 mile NW of **Otake Saki** (30˚22'N., 130˚58'E.).

Hitotsu Se (Yoko Se) (30˚21'N., 130˚59'E.), a detached, black, cylindrical rock, is conspicuous from the N and S. A rock lies about 0.4 mile N of Hitotsu Se. Water breaks over this rock except when the sea is calm.

Genzaburo, about 2 miles SW of Ori Se, is a reef with a least depth of 4.5m. Another reef lies about 0.4 mile NE of Genzaburo. Several reefs and a wreck dangerous to navigation lie between Genzaburo and Nabewari.

Nabewari (30˚17'N, 130˚57'E) is a shoal marked by breakers, except at SW on very calm days.

Ori Se (30˚20'N., 130˚59'E.) is nearly always marked by breakers.

Schichijin Sho lies about 3 miles S of Nabewari. There is a rock here, with a least depth of 12.8m.

There are a number of above-water rocks off the NE side of O Saki (30˚24'N., 130˚59'E.), the outermost of which is red in color and somewhat conspicuous.

Hijiri Yama (30˚25'N., 130˚56'E.) has its summit is covered with trees; it is conspicuous from the E.

O Ura (30˚28'N., 130˚58'E.) affords anchorage to small vessels, in 5.9 to 15.1m, sand, but prolonged NE winds send in a heavy swell; the anchorage space is restricted, and there are so many dangers in the approach that local knowledge is essential.

Kumano Yama (30˚28'N., 130˚58'E.), a conspicuous hill covered with large trees, rises to an elevation of 99m to the tree tops, close to the coast, about 0.6 mile N of the N entrance point of O Ura.

7.75 Ori Se (30˚31'N., 131˚00'E.) has a depth of 0.9m; it is usually marked by breakers.

Mage Se (Magenose) (30˚32'N., 131˚02'E.) has a depth of 1.8m; the sea breaks over it in rough weather. An obstructed fish haven lies about 2 miles SW of Magenose.

Yama Se (30˚33'N., 131˚02'E.) is a reddish pointed rock, 30m high; it is conspicuous from S. Kuro Se, a flat-topped rock, 16m high, lies about 0.2 mile E of Yama Se. A rock, which dries, stands between Yama Se and the N edge of Mage Se.

Naka Se (30˚34'N., 131˚03'E.) has a depth of 0.9m; it is usually marked by breakers.

Yasumino Hana (30˚36'N., 131˚03'E.) is faced with steep cliffs; on it is a solitary pine tree that is conspicuous from the N or S.

Okuro Se is a conspicuous rock, 15m high, lying close off a small rocky point, about 0.6 mile N of Yasumino Hano. A dry exposed rock shelf stretches for about 0.2 mile SE of this rock.

Minato Ura is a cove at 30˚49'N, 131˚04'E. Shira Hae, a rock, with a depth of 5.9m, lies about 0.5 mile NNE of the E entrance point. The cove affords shelter to small vessels, with local knowledge, during E winds.

Kisika Saki is the N extremity of Tanega Shima. Reefs extend about 0.5 mile N of this point and a light is shown from the point.

Tide rips are encountered to the N of both Kisika Saki and Mage Shima.

Senohana is a rock with a depth of 7.3m that lies about 1.5 miles N of Kisika Saki. There are eddies in this area.

Mage Shima

7.76 Mage Shima (30˚44'N., 130˚51'E.) is covered with a thick growth of grass and there are but few trees. Though there are a few groups of sheds, the island is not permanently inhabited, but is frequented by fisherman during the season.

Anchorage.—Vessels with local knowledge can obtain open anchorage, in 12.8m, rocky bottom, with the summit of Mage Shima bearing 230˚, the E extremity of the island bearing 194˚, and Sata Misaki, the S extremity of Kyushu, slightly open N of the N extremity of Mage Shima. Vessels approaching this position from NW must exercise caution when rounding the N end of the island. A submarine cable is laid from this coast at a point about 0.8 mile SSE of the light on the N tip of the island. This cable runs E and ESE to Tanega Shima.

A depth of 17.4m lies about 7.3 miles SSW of this same light.

Kutinoerabu Shima

7.77 Kutinoerabu Shima (30˚27'N., 130˚13'E.) is thickly covered with bamboo; about 0.4 mile N of the pointed summit of the island is a sharp grassy peak, 632m high, that is a conspicuous feature. Shin Take and Furu Take are volcanoes rising a short distance, respectively, NW and SW of the summit of the island. The only cultivated land is in the vicinity of the houses.

Kutinoerabu Shima has been reported radar conspicuous at 24 miles.

7.78 South side of Kutinoerabu Shima.—Mishima Saki is at 30˚27'N, 130˚12'E; about 0.5 mile S of the point there is a valley through which flows a river, the constant muddy outflow of which causes the surface water in the vicinity to assume a light yellow color.

Kutinoerabu Wan, entered between Mishima Saki and Taka Saki, about 0.5 mile WNW, is protected by a breakwater. A radio tower, 6.1m high, stands on the N side of the bay.

Anchorage.—Except with winds between S and W, good anchorage can be obtained, in 9.1 to 18.3m, fine sand, in the middle of Kutinoerabu Wan; N winds sometimes blow across the isthmus at the head of the bay.

Taka Saki is faced with a conspicuous, steep, black cliff and is surmounted by pine trees.

No Saki (30˚29'N., 130˚09'E.) is a dark cliffy point, covered with thickets of bamboo, and is conspicuous. There is a light on this point. At its extremity, there is a pillar-shaped rock, 30m high, that from N or S appears detached. There is a conspicuous, conical, detached rock, 33m high, about 0.3 mile NE of the point.

7.79 North side of Kutinoerabu Shima.—Jono Hana (30˚27'N., 130˚16'E.) is a conspicuous cliffy cape, with a pointed, grassy summit. There are three conspicuous peaks, 258m high, nearly 1 mile WSW of Jono Hana.

Aspect.—A steep brownish cliff rises 65m, about 2 miles NW of Jono Hana.

Anchorage.—Small vessels with local knowledge can obtain anchorage, sheltered from W winds, close SW of the outermost rock off Jono Hana.

Nishi Ura is entered between **Ori Saki** (30˚29'N., 130˚12'E.) and Kuro Saki, about 1 mile WNW.

Anchorage.—Nishi Ura affords anchorage to vessels with local knowledge, in depths decreasing from 16.5 to 14.6m; the bay is open N, and S winds sometimes blow across the isthmus at its head; the bottom is of sand and shells, and the anchorage cannot be considered safe.

Caution.—Submarine cables run from far inside this bay to Yaku Shima.

Iwaya Tomari is entered between Kuro Saki and Kitakame Hana, about 0.8 mile NW.

Anchorage.—Iwaya Tomari is open NE, but affords anchorage, sheltered from S winds, to small vessels with local knowledge, in 9.1 to 14.6m, sand and shells.

Kitakame Hana (30˚29'N., 130˚10'E.) is faced with a steep cliff and lies about 1 mile E of No Saki, to which it bears some resemblance, though it is somewhat the higher of the two. Yano Mine, which dominates Kitakame Hana, is covered with bamboo and conspicuous; it is 148m high and slopes S.

Take Shima

7.80 Take Shima (30˚48'N., 130˚26'E.) is covered with a dense growth of bamboo. Ombo Saki, the W extremity of the island, is surmounted by a conical hill, 69m high.

Anchorage.—Small vessels, with local knowledge, can obtain anchorage, sheltered from S winds, in about 23.8m, coral, rock, sand, and shells, in a small bay on the N side of Take Shima, but the anchorage is not good. Care is necessary to avoid the submarine cable.

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Io Shima

7.81 Io Shima (30˚47'N., 130˚19'E.), with Io Take near its E end, is an active volcano, 706m high, from which smoke rises continuously. Yahazu Take rises to an elevation of 349m about the middle of the NW side of the island; it has a pointed summit and is a conspicuous feature.

Caution.—Because undiscovered dangers may exist in the waters around Io Shima and the sea in the area is discolored by sulfur outflow, the vicinity should be avoided.

Ioshima Ko (30˚46'N., 130˚17'E.) is a small bay in the W part of the S coast of Io Shima, the depths in which are too deep for anchorage. This port is used for shipping stone and bamboo. Fishing vessels of less than 100 tons use this port as a refuge. Two submarine cables run from the head of this bay.

Kuroshima Saki (30˚46'N., 130˚16'E.) is the W extremity of Io Shima, and in its vicinity are numerous rocks, one of the outermost of which is usually marked by breakers.

Sin-Io Shima (30˚48'N., 130˚21'E.), sometimes known as Shin To, is an islet of lava, 26.5m high, the result of an eruption in 1934.

The surface water within about 0.2 mile of the SE extremity of Io Shima is reported to be of various colors.

There are several rocks and reefs on the NE side Io Shima; when navigating in this area vessels should proceed with caution and refer to the chart.

Groups of above and below-water rocks lie S and SE of the SE extremity of Io Shima. These depths are as shallow as 2.7m. Reference should be made to the chart.

Yu Se (30˚45'N., 130˚06'E.) consists of three islets of about the same height, the middle being 56m high, together with a rock, 2.1m high; when seen from NW or NE, the group resembles a pagoda or tower.

Kuro Shima

7.82 Kuro Shima (30˚49'N, 129˚56'E.) is mostly covered with a dense growth of bamboo, although it is cultivated in a few places. Earthquakes are a frequent occurrence.

Anchorage.—Temporary anchorage, sheltered from S and SW winds, can be obtained by vessels with local knowledge, in 21m, sand and shells, in the small bay close NW of Kaburi Hana (Kafuri Bana), the E extremity of Kuro Shima. Care is necessary to avoid the submarine cable.

Kusakaki Shima

7.83 Kusakaki Shima (30˚51'N., 129˚28'E.) is a group of about 17 bare and precipitous islets and rocks. Although the group would appear to be steep-to, vessels should not approach within 1 mile of any of the islets and rocks. Kusakaki Shima has been reported radar conspicuous at 10 miles.

Kusakaki-Kamino Shima, at the NE end of the group and marked by a light, is frequented by fisherman during the season.